

NEW

FROM THE MAKERS OF
HOW IT WORKS

How to change
a tyre



Build the best-ever
sandcastle



Make the perfect
DIY slushie



Maximise your
travel plans

100
SOLUTIONS
TO EVERYDAY
PROBLEMS



The right way to
put up a tent



Top decorating tips



Battery myths
busted



6 ways to fix
your phone

LIFE HACKS

LEARN HOW TO LEVEL UP YOUR LIFE SKILLS LIKE A PRO

Grind coffee without
a grinder



How to put up a
shelf straight



Make any photo
a masterpiece



What to do while
you wait for a plumber



Become a Spotify
power user



Maximise your
mowing



**Digital
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FUTURE

SECOND
EDITION

+

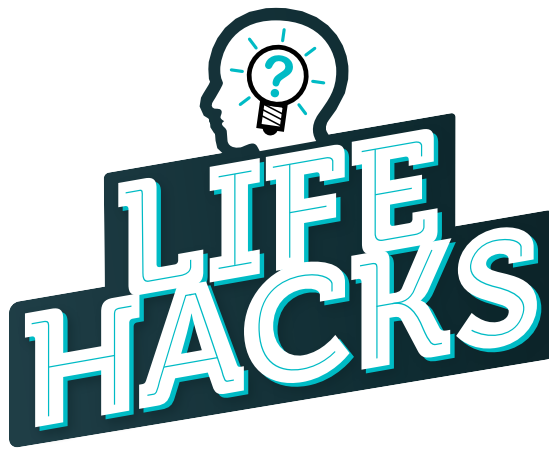
DIY FIXES TIME-SAVING TIPS SOLVE IT WITH SCIENCE TOP TECH TRICKS





LIFE HACKS

Do you want to be better at everything you do? Whether it's fixing up common household problems and getting those tiresome DIY jobs done quickly, or getting the most from your tech, or learning cool new skills and how to make the best of everything, we can help! This indispensable guide will teach you how to combat DIY disasters and make jobs like de-icing, changing tyres and mowing quicker and easier. You'll learn how you can transform your photos and videos, boost your Wi-Fi signal and fix your phone. And you'll discover how you can be better at everything, from making the tastiest food and drink to catching a wave on a surfboard or learning a new language. Read on to discover the best quick fixes, problem solvers, performance boosters and time saving life hacks.



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Part of the

**HOW IT
WORKS**

bookazine series



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Learn how to level up your life skills like a pro

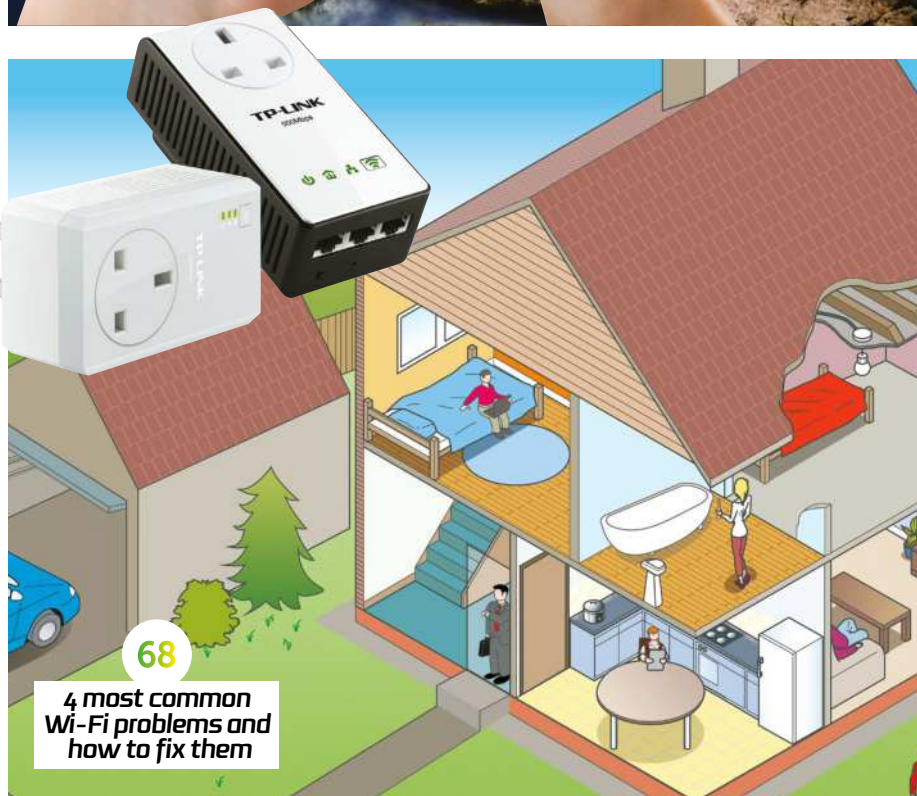


**DISCOVER
QUICK
TRICKS &
CLEVER
SOLUTIONS**



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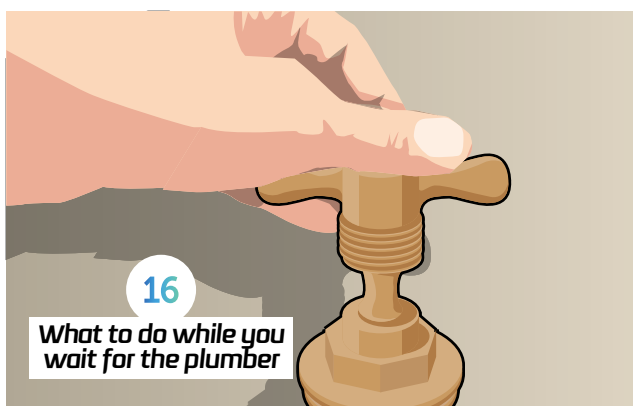
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AROUND THE HOUSE

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LIFE HACKS

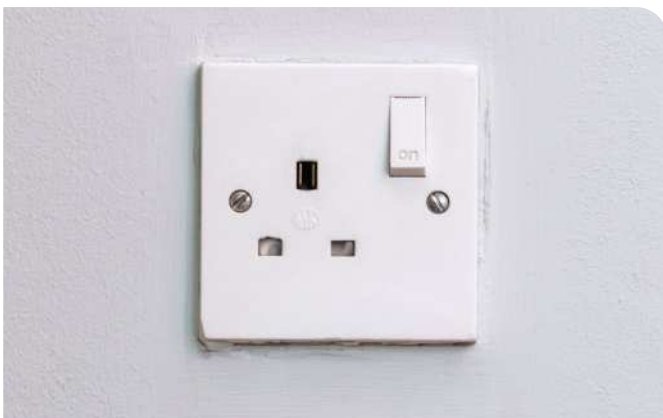
DON'T NAIL THROUGH LIVE WIRES

Detect pipes and wires and spot studs to avoid major DIY disasters

“

Common sense obviously plays a part with tracing hidden wires

”



01 Socket to 'em

Before you even pick up a drill, you need to work out the best place to hang whatever it is you're wanting to put up on the wall. Look for obvious problem areas, such as radiators or electrical sockets, as they're obviously going to have some pipework or wires located in their immediate vicinity behind the wall. Once you've found the perfect spot then it's time to bring out the detector.



02 True detective

To make sure that you're not about to drill into something then you need to have something like a multi-detector – of which there are many, but we're going with this excellent one from Bosch. Place the device against the wall and it'll light up green when you're safe to drill and red when you're not. You even get a bar that increases or decreases to show you how close you are to the potential hazard.

It's a weekend, there's nothing on TV and it's chucking it down outside. This unholy trinity combines to lead you to only one conclusion: it's time to finally do those DIY jobs you've been putting off for weeks (months or years – delete as applicable). Whether it's a picture that needs hanging, a mirror that's desperate to go up on the wall or a TV bracket in the kids' room, there are a few things you need to check first before you can get stuck in.

Common sense obviously plays a part with tracing hidden wires and pipes. If you have a radiator on the wall then it's safe to assume there's a water pipe leading to and from it. And the electricity for sockets has to come from somewhere, and it's usually down from the ceiling, so you can normally trace the electrical cable back up the wall. That isn't always the case though, and before you start drilling or hammering, it's very important to make sure that there's nothing hidden behind the wall.

Similarly, If you need to hang something heavier on the wall then you'll need a stud locator to find the wooden supports – which is far more accurate than tapping on the wall with your ear up against it.

ESSENTIAL SCANNERS



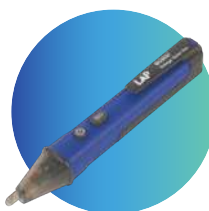
Stanley FatMax Stud Sensor

If you want to hang something heavy on an internal wall then you'll need to locate the wall's studs to hang the bracket on. Although they're made of wood, the nails holding the plasterboard aren't, so you can locate them with a stud finder – like this one from Stanley. **£30 | \$30 | stanleytools.co.uk**



Bosch PMD 7 Digital Detector

If you'd prefer an all-in-one tool, though, then this one from Bosch more than does the job as it detects wood, studs, metal objects or live wiring. The PMD 7 detects up to seven centimetres below the surface, for something more powerful, try the Bosch PMD 10. **£30 | \$40 | bosch-professional.com**



LAP Voltage Detector Pen

Once you have found the electrical wires in your walls, it would be good to have a voltage detector to hand in order to test whether the wires are live or not. To double-check this, you can use the individual fuses on the circuit board to isolate the specific area you need check. **£5 | \$10 | screwfix.com**



DeWalt Inspection Camera

If you want to do spot wires in style, though, then invest in an inspection camera. Make a small hole in the wall and you can insert the camera with the image coming through to a built-in 3.5-inch screen. Any foreign objects or stray wires will now be easy to spot. **£200 | \$260 | dewalt.com**



03 Better safe than sorry

It's never worth risking drilling if you're not sure, as if you hit either a water pipe or electrical wire, then the resulting damage could be tremendous. Only stop checking when you're 100 per cent convinced that it's safe to carry on drilling and that there are no red flashes coming up at all on the detector. Then, when you're clear, you're now free to get on with your job.



04 Oh, you stud

If you want to hang something heavy on the wall then you're going to need to attach it to one of the studs that make up an internal wall – you won't have this problem if you're attaching something to an external wall. Move your stud finder along the wall until it locates the first stud. Mark it and then continue on until you find the second. These indicate the two edges of the stud, so you're safe to drill between them.

LIFE HACKS

HOW TO PUT UP A SHELF STRAIGHT

Hanging a shelf is easy, right? Famous last words, but we've got the gadgets to keep you on the level

It's said there's no greater test of a man's mettle than putting up a shelf. In theory, it's a simple task, but to attempt it without knowing the basics can lead to a DIY disaster, not to mention potential ridicule. So we have some tips to make it easy and ensure you have the best bragging rights.

As with anything in the DIY world, the trick is patience. Make sure you're fully prepared, have all your tools to hand and if you really want to look like you know what you're doing, then we recommend investing in the gadgets that are designed to make life easier for you. A cable detector could potentially save your life and a laser level not only guarantees you a perfectly straight line, but looks pretty cool too. Here are the steps to follow to get you to DIY Nirvana.

SCREWING AROUND

Rather than have several screws and wall plugs hanging out of your mouth, we suggest you make life a little simpler and get a decent electric screwdriver to take the hassle out of hanging the brackets. Our recommendation? The super-powerful Makita Autofeed is perfect boys' toys for any DIY job. You can attach a screw feed so any job is quick, easy and (hopefully) painless.



£178 | \$253
makitauk.com

**Makita Autofeed
Screwdriver**



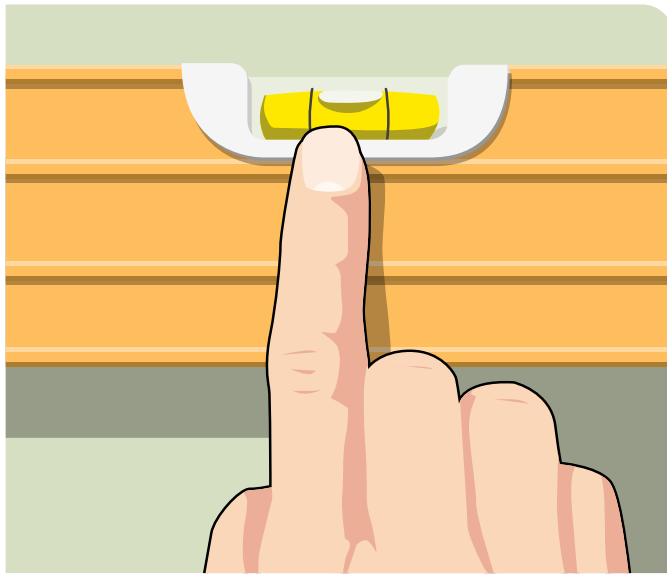
01 Preparation is the key

Firstly, you'll need to find the right spot for your shelf. Bear in mind that it may appear to be perfectly in the middle of a bare wall, but you need to make sure you're not drilling into pipes or cables. Use a decent cable detector (we recommend the Bosch PDO 6 Digital Detector for this) and avoid any spots where the indicator flashes.



03 Hit that sweet spot

Now hold the first bracket up against the line and mark the drill holes with a pencil – if the holes in the bracket are too small then you can use a piece of coat hanger wire or a bradawl tool to make the marks. Remove the bracket and add a nail dent to this exact spot on the wall to make the drilling more accurate.



02 An exact science

If you want to be really smug and use technology to make life much easier for yourself, then get a laser level to mark out the perfect straight line for the shelf. If you feel like doing it old school, place the shelf where you'd like it and use a spirit level to get it completely straight. Now mark a line directly underneath the shelf in pencil.



04 Where there's a drill there's a way

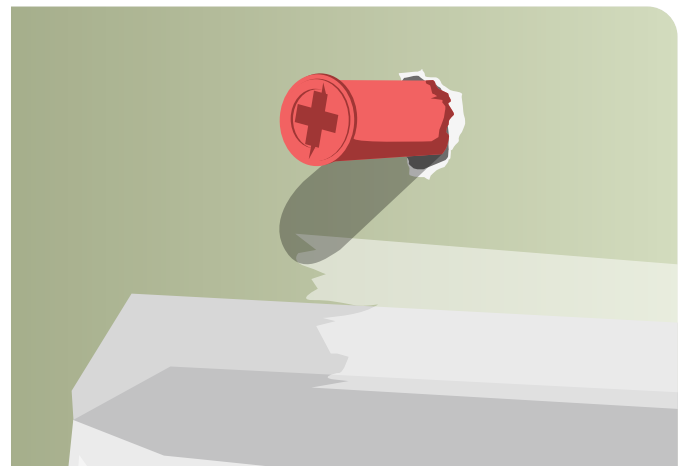
You can use a standard drill bit for a stud wall, but you'll need a masonry bit if you're drilling into concrete. It will have to be a screw that's at least 30mm in length, so the easiest way to gauge this depth is to measure it on the drill bit and mark it with tape. Drill the holes slowly.

BISH BASH BOSCH

Messing around with a pencil and a spirit level is so last century, why not use the technology that's out there and do it in sci-fi style? A laser level simply clamps onto a piece of furniture, projects a perfectly straight line onto a wall and is an inexpensive way to guarantee that your shelf is perfectly level. One of the best around is the simple-to-use Bosch Quigo.



£42 | \$66
bosch-quigo.com
Bosch Quigo



05 Plug the gap

Put in the wall plugs, firstly making sure they're the correct size for the hole. If they don't go in, either use a smaller plug or a slightly larger drill bit (going up 0.5mm should do it). Attach the bracket and then repeat the same process for the other. Simple!

THE BEST OF THE REST: LASER LEVELS

Black & Decker BDL 120

£15 | \$33

blackanddecker.com

Cheap and cheerful, this laser level has to be held up on the wall to project the line, but it does have a spirit level to keep things nice and straight.



DeWalt DW088K Self-Levelling Line Laser

£140 | \$135

dewalt.co.uk

If you're looking for something a bit more professional then the DeWalt Line Laser is pricey yet perfect.



Stanley Cubix Cross Line Laser

£36 | \$70

stanleytools.co.uk

Strong and sturdy, despite the low price, Stanley's laser level comes with its own clamp and has a range of up to ten metres.



Silverline Mini Laser Level (210mm)

£10 | \$20

silverlinetools.com

If you've secretly always desired a laser level, but price is an issue then they don't come cheaper than this one.



LIFE HACKS

DECORATE LIKE A PRO

The tips you need to avoid a DIY disaster

Decorating a room is easy, right? Well yes, admittedly it's not rocket science, but there's definitely a right way and a wrong way to do it. The last thing you want after spending weeks – or maybe months – poring over those glossy home-decoration magazines for inspiration, tentatively dabbing tester pots on the wall and arguing over colours until you finally get your own way, is to make a silly mistake.

To help you avoid decorating disasters, here are five simple techniques to get you started, as well as pro tips for choosing the right brush for the job. Sounds too much like hard work? Check out our top five tools to make the whole process quicker and easier.

“Decorating a room is easy, right?”



01 The easy way to strip wallpaper

If the wallpaper has a vinyl coating then it's slightly easier as you can simply scrape off all the vinyl with a wallpaper knife (at least three inches wide). Then soak the backing paper with warm water, leave for around ten minutes and then scrape it off. If your wallpaper has been painted then it's worth scoring it first to let the water soak through. You can use an electric steamer if you wish, which can be rented from any tool hire store.



02 The delicate art of cutting in

Cutting in (the process of painting around the edge of a wall that's bordered with a different colour) is a slow and very laborious task, but it can be made much easier with a paintbrush that has an angled head. You can pick up one of these at any major DIY store or if you have a spare brush around three inches wide, then you can always trim it yourself to save money.

5 TOOLS TO MAKE DECORATING EASIER



Stanley Orbital Wallpaper Scorer

A simple tool to make life easier if you have to remove wallpaper, as the rotary cutting wheels perforate the wallpaper to help with stripping. £14 | \$30 | stanleytools.co.uk



3M Hand-Masker

For a really professional finish, this masking kit is ideal for masking windows and doors in an instant. It even comes with an instructional DVD too. £52 | \$36 | 3mdirect.co.uk



JML Point 'n' Paint

The Point 'n' Paint is a simple device with a sponge attachment that makes easy work of applying paint and the pointed end makes cutting-in a doddle too. £10 | \$15 | jmldirect.com



03 The perfect way to paint windows

Everyone hates painting windows as it takes ages and keeping the paint off the glass is a major hassle. There are several ways that it can be made easier though. Firstly, you can use masking or painter's tape to cover the edge between the glass and the wood, but this can take a while to tape up if the window has a lot of panes. Alternatively, you can just paint over onto the glass and then use a paint scraper to remove it or smear the edge of the glass with Vaseline, which can then be easily wiped off after painting.



04 Lose the drips

It's tempting to overload a brush with paint as you obviously want to do the job as quickly as possible, but a better idea is to dip only the bottom half of the brush into the paint and then tap it firmly on the side of the tin to get rid of excess paint. It'll take a little longer, but the results will be much better.



Purdy Brush Roller Cleaner
A cheap tool that will shave off valuable time when it comes to cleaning out all of your brushes and rollers.
£6 | \$3 | purdy.co.uk



Black & Decker Fine Spray System
If you want to paint quickly, you need a paint sprayer, like this beauty from Black & Decker.
£50 | \$75 | stanleytools.co.uk

HOW TO CHOOSE THE BEST BRUSH

01 Simply the best

Always choose the best brush you can afford. Cheap ones will constantly shed bristles and will hold less paint, so it pays to splash out a bit.

02 Variety is the spice of life

No one brush can do all jobs, therefore get yourself a selection so you have one for every task. A one-inch brush (angled if possible) is ideal for windows and delicate work, a five-inch one is good for large spaces, and finish off with a couple of two or three-inch brushes (one angled) for edges and cutting in.

03 Real or artificial?

You may think that buying a brush with natural bristles is always the best option, but modern synthetic ones are very good too – although natural bristles can give you a better finish for gloss work.

04 Handle with care

If you're going to be using your brushes a lot then it makes sense to get one that feels comfortable in the hand – whether that's wooden or plastic. Hold a few and see which one feels best.

05 Handle with care

Take the time to clean out all the paint from your brushes after you've finished painting to stop them getting hard and unusable. Then, when they're clean, store them upright in a container or jar to stop them warping out of shape when they're dry.



05 The right tools for the job

If you want to be really professional about it, then you could always remove the radiator from the wall to paint behind it, but a much simpler way is to use a dedicated tool for the job. Get yourself a proper radiator brush or roller (neither should cost you more than £5) and you'll be able to quickly paint behind the radiator without getting any paint on the radiator itself.

LIFE HACKS

WHAT TO DO WHILE YOU WAIT FOR THE PLUMBER

Top tips for when you spring a leak

Pipes have an irritating habit of bursting at the most inconvenient moments, where you then find yourself frantically trying to get a plumber to sort out the rapidly rising tsunami that's in your house. Sounds horrible doesn't it? Well, modern technology can even help in these kinds of situations and this workshop aims to remove some of the stress by giving you tips to make sure it doesn't get any worse, help you to find a trusted tradesperson and also suggest some devices that could potentially stop the problem before it really starts. The key thing is, be prepared! If you're not, you're sure to regret it when the water starts to rise.

From \$699
waterheroinc.com

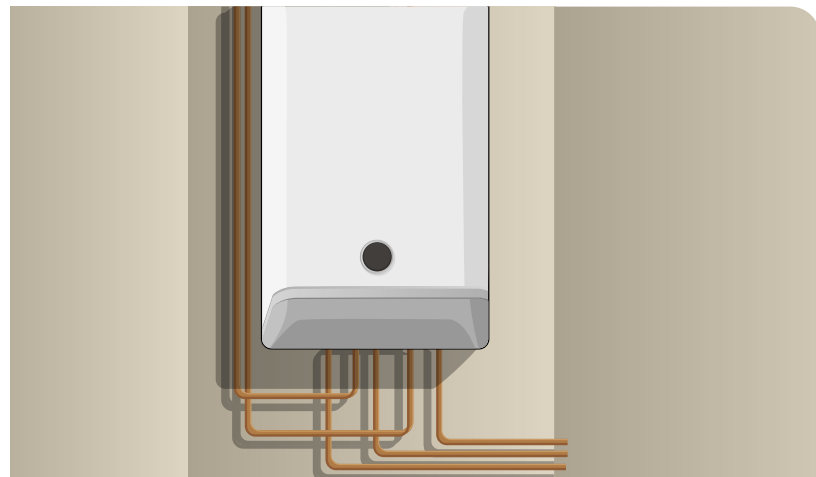
Water Hero

Attach to your water supply and it will automatically shut off the water in the event of a leak and send you a text. The website is US-based but the device works anywhere.



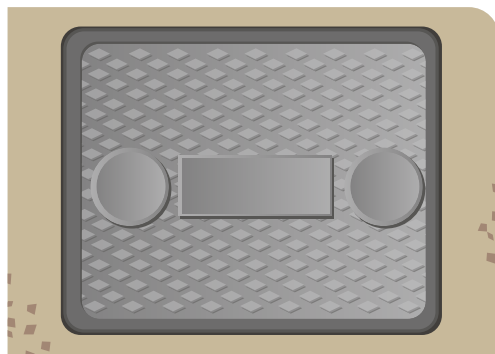
01 Shut off the supply

Invest in the Water Hero alarm (below) and it can send you a text and automatically shut off the water when you get a leak. But until then, you'll have to do things manually! Locate the water stop tap and turn it clockwise. You will usually find it either under the kitchen sink or in a downstairs bathroom.



02 Know where your boiler is

To make it easier for when the plumber gets to you, make sure you know the locations of your boiler, heating controls and (if you have one) the hot water tank. It may sound obvious, but plumbers charge by the hour, so the less time they spend looking for these things, the more money you'll save.



03 Flushed with success

If your drains are blocked then the plumber will need to look at your manhole cover. Again, if you don't know where it is then look for it first. If you fancy doing it yourself, try out the Professional Power Plunger. Pump the plunger to compress the air then pull the gun-like trigger to release the blockage.

04 Switch off the power

If you have a serious water leak then it's probably wise to turn off the electricity too in order to avoid any shocking accidents. It really is better to be safe than sorry. Make sure that you've got a handy torch or lantern to hand first though, especially if the leak occurs during the night.



Pull the trigger

When the air is compressed, pull the Plunger's trigger to release a shockwave through the water to dislodge the blockage – which is oddly satisfying to do

Pressure release

There's also a handy pressure relief valve should you need it

Varied adaptors

You can use the Power Plunger on any waste outlet in the house – including baths, showers and toilets – by changing the adaptor

Pump the plunger

Once you have the right adaptor on the PPP (as it likes to be called), pump the plunger here to compress the air in the main chamber

£26 | \$47
amazon.com

Professional Power Plunger by Monument

When a regular plunger just won't do, Monument's Professional Power Plunger is a lot cheaper than calling a plumber and should be an essential piece of kit.



£12 | \$18

faithfulltools.com

Faithfull Portable Water Leak Alarm

This won't stop leaks, but it will let you know when one starts. Place it where a water leak could potentially occur and a loud 80-decibel alarm will sound.

Get a plumber in 60 seconds



Yelp

This app lets you search for practically any business near you, which is nothing new, but the wide range of reviews posted online will make sure you find the perfect person for the job.

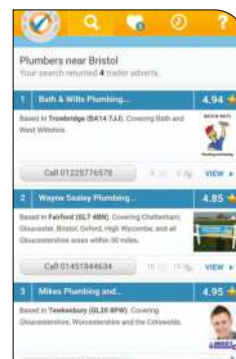
Free
yelp.co.uk



MyBuilder

A slightly different website in that you post about the specific job you need doing and local tradespeople then respond to offer their services. They're rated by other users too for peace of mind.

Free
mybuilder.com



TrustATrader

An app and website specifically designed to find you a tradesperson with a minimum amount of fuss. The range might not be as large as Yelp's database, but every one is guaranteed to be reputable.

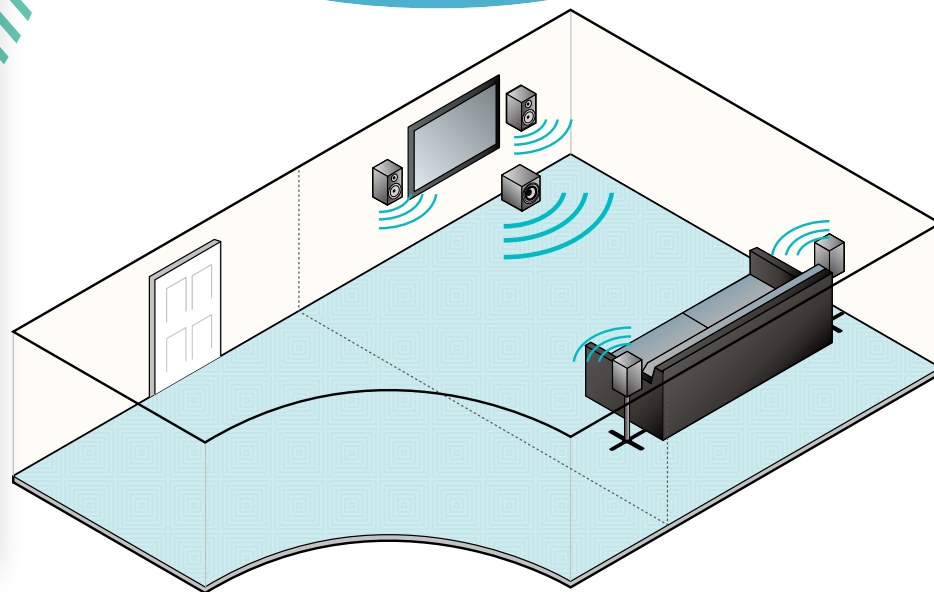
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trustatrader.com

LIFE HACKS

GET BETTER ACOUSTICS IN YOUR ROOMS

Get more boom for your buck with these arrangement tips

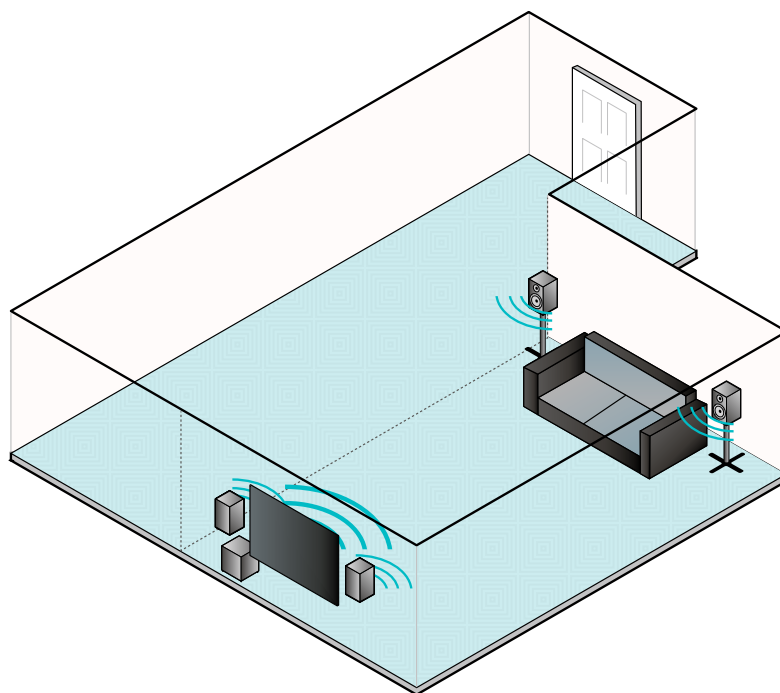
As an audiophile, the quality of your favourite music – be it Led Zeppelin or Mozart – is paramount. With a little care, you can turn the living room in your semidetached house into an acoustical paradise that makes every note and every beat sound as though you were listening live. It all comes down to good speaker placement. Hide expensive speakers behind furniture and they'll sound muffled; put a set of budget speakers in just the right place and they'll sound like they are worth twice the price. The average home though, is not a concert hall, so how do you overcome odd-shaped walls and furniture to guarantee yourself the best sound?



CUTTING CORNERS: MAKING AN ANGLED ROOM SOUND GREAT

So you had to be awkward and choose an abode where the rooms are odd shapes. All those little nooks and crannies suddenly become unappealing when you're after the best sound. Avoid corners by arranging your

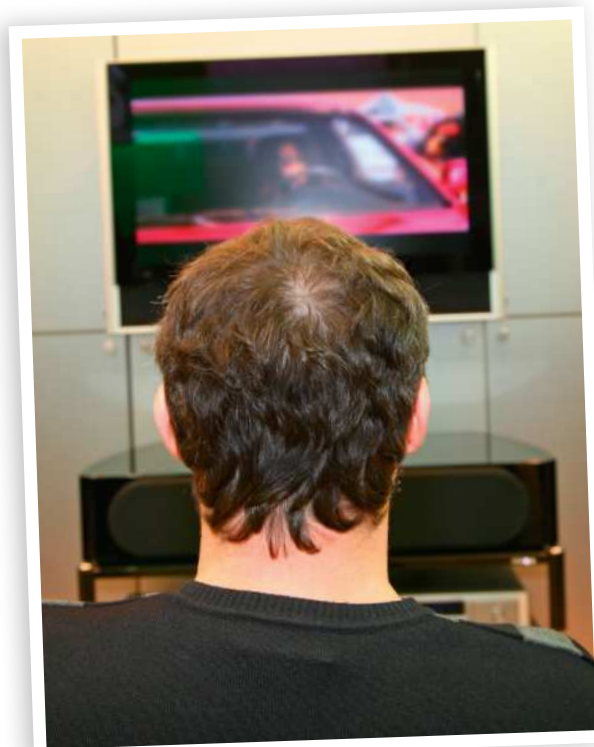
audio/visual equipment and your seating in a rectangle. Although this will obviously mean that you have to arrange the rest of your furniture around them in the space left. But the sound is worth it!

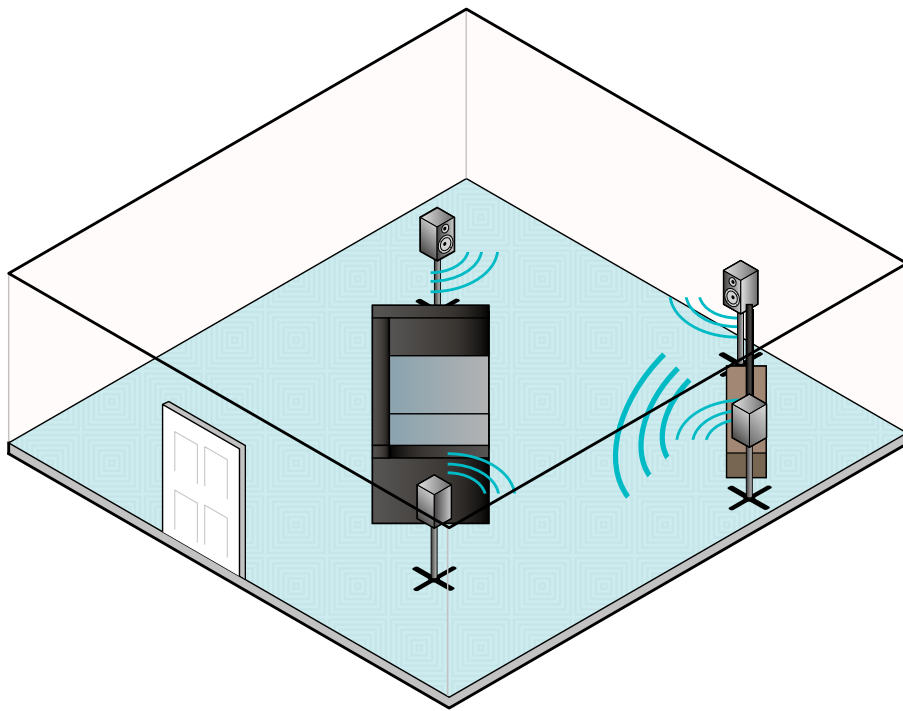


SOUND IN AN L-SHAPED ROOM

The trick here is first to not think about the room as one L-shaped room, but as two rectangular rooms. Ensure your sofa is positioned close to the TV/speakers and not on the other side of the room from them. Inevitably part of the room is going to suffer from poor sound, so make sure it is not the part you predominantly listen to music in.

Position your sofa against one long wall and the TV and main speakers opposite it. One surround speaker will be set off from one side wall, but the other will be in the middle of the room. You may have to move it back against the wall to avoid kicking it every time you walk past, although putting it against the wall will minimise its sound quality.

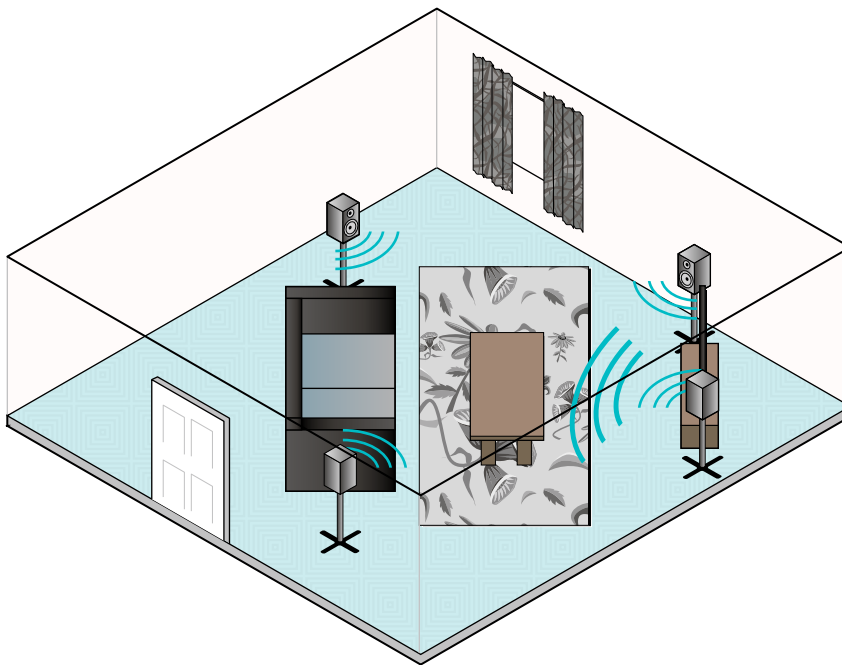




THE AWKWARD SQUARE-SHAPED ROOM

Square rooms are bad for getting great sound from your speakers. The walls are all equidistant, so waves of sound reflect from the walls and end up favouring one frequency over others, affecting the tonal quality of the sound. If you put your TV/

stereo speakers into a corner at a 45-degree angle, away from reflective walls with the speakers at least 30-inches in front of the TV, that can help. Speakers are best placed in an equilateral triangle arrangement with the listener at the tip of the triangle.



WHY REFLECTIVE SURFACES ARE BAD

All rooms are reflective, with sound waves reverberating from flat surfaces such as walls, tables and counters. These reflections work against the sound quality of your music or the television to varying degrees, depending upon the shape of the room and the presence of other factors, such as furniture and carpets, which can absorb

sound (known as damping). While damping can nullify standing waves, which cancel certain frequencies when they reflect off a wall, damping can also significantly lower the volume of your music. Although this may be to the delight of your neighbours, it isn't ideal for music lovers who enjoy listening to their tracks with audio clarity.

YOU AND YOUR SPEAKERS

Get the speakers positioned right and you're halfway there

The triangular T-shaped arrangement of speakers enables sound to be projected equally around the listener. The idea is to have the left and right loudspeakers placed at equal distances from your position at the tip of the equilateral triangle, so that sound arrives in phase from both sides. Sound is not distributed evenly between the two speakers – if they are placed so they are out of phase, the result can be that the sound from one speaker cancels the sound from the other. They are angled by about 30 degrees to the listener, and 60 degrees from one another (remember, the angles of the three corners of an equilateral triangle are all 60 degrees, adding up to 180 degrees).

Speakers

Stereo speakers provide two audio channels. The two stereo speakers should go either side of the TV in a T-shape arrangement. This setup is known as a 2.0 audio system.

Subwoofers

These bass-inducing devices can be placed anywhere in a room. Adding a subwoofer to a two-channel setup is referred to as a 2.1 system.



Surround sound

Surround speakers create an immersive sense of sound. They should be at an angle of 110 degrees to either side of your listening chair, equidistant from you and not up against a wall. The common 5.1 surround sound system includes five speakers for five channels of audio, plus one subwoofer.

Rear speaker

A 7:1 system with seven speakers is the best that most home audio receivers can handle. The extra speakers go at the rear of the room, left and right, 135 to 150 degrees behind your listening chair. However, fewer Blu-ray movies currently cater for 7.1 audio systems better than they do for 5.1.

LIFE HACKS

HOW TO ESCAPE A BURNING BUILDING

Keep a cool head during a house fire

No one likes to imagine that there will be a potentially fatal fire in their house, but the fact remains that sadly they're an all-too common occurrence and although you may think that your house is safe and secure, accidents do happen.

One thing that could save your life in the event of a house fire is a set of working smoke alarms. Have one in every room of the house and check them regularly to make sure that they really are

working. If there's a fire in the middle of the night then they will almost certainly wake you up before you could possibly know there's a fire in the house.

With the proper kit at your disposal, a decent fire plan in place and a smattering of common sense though, we believe that fire fatalities can be avoided. And although statistics show that house fires and also fatalities are fortunately dropping each year, it pays to be prepared for the worst.

THE KIT THAT COULD SAVE YOUR LIFE



First Alert Fire Blanket

We can't recommend getting one of these fire blankets enough, as it's the perfect thing to have close at hand in an emergency – especially in the kitchen. **£17 | \$25 | firstalert.eu**

Nest Protect

From the people who brought you the brilliant Nest Thermostat, the Protect senses when there's a hint of smoke in the house and gives you a spoken warning – it can even send a message to your smartphone to alert you. **£89 | \$100 | nest.com**



SentrySafe Fire Chest

If you do have a fire, it's good to know that your most precious documents remain safe. This Fire Chest is the perfect thing for storing any of your valuable documents and jewellery, and it is also guaranteed to have at least 30 minutes of complete fire protection. **£24 | \$27 | sentrysafe.co.uk**



Firemart 2kg Dry Powder Fire Extinguisher

This small yet perfectly formed fire extinguisher is the ideal size for home use and, as it's dry, it can be used for electrical fires too. **£17 | \$25 | firemart.co.uk**



Kidde 3-Storey Escape Ladder

Hopefully this is one thing you'll never have to use, but if the fire spreads upstairs, then this escape ladder could make the difference between life and death. It packs down small so can be stored away, but it's also easy to deploy if you need to make a quick escape. **£65 | \$53 | kiddesafetyeurope.co.uk**

HOW TO SURVIVE IF THE WORST SHOULD HAPPEN



01 Make a plan

The best way to survive a house fire is to be prepared and have a fire plan. Basically, this means in the event of a fire everyone knows what they should be doing and there's a planned escape. One person in the household needs to be in charge: they need to make sure everyone is out and call the emergency services.



02 Try to close the doors on your way out

If it is possible to safely do so, close the door to the room where the fire originated and then close all the other doors behind you on your way out of the building. This should help to delay not only the spread of the fire, but also the smoke too, which can be just as dangerous.



03 Check for heat before opening the door

Never ever open any doors in the house until you're sure it's safe, as there could be a fire on the other side of it and opening the door could cause it to spread. If you're unsure, touch the door with the back of your hand. If the door feels warm then don't open it.



04 Block all the gaps

If you're blocked in a room by the fire, close all the doors and use towels and sheets (wet if possible) to block any gaps (at the bottom of the door, for example). This will help to stop any smoke spreading into the room. If smoke does get in, keep as low to the floor as possible as smoke rises upwards.



05 Ring for the emergency services as soon as you can

If you're trapped, ring the fire brigade as soon as possible. Also open your windows and shout for help to attract the attention of any passersby or neighbours who may be able to help. This should obviously be the first thing you do if you don't have access to a phone.



06 Get to safety through the nearest windows

If you're trapped and in immediate danger then it's time to get out through the windows. If you don't have an escape ladder then drop as much bedding and cushions out of the window to soften the landing, then climb out and lower yourself down before dropping.

HOW COMMON ARE HOUSE FIRES?

28,200

Home fires in England between April 2014 and March 2015

26%

Drop in the number of house fires in the last ten years

215,600

False fire alarms in the UK were attended by the Fire and Rescue Service during 2014 and 2015

44%

Percentage of false alarms attended by local fire services

163

Total fatalities in England in home fires during 2014 and 2015

30%

Drop in the number of fire fatalities in the last ten years

2

Number of home fires started every day by candles

6,000

Number of home fires are caused by faulty electrics in the UK every year

35

Number of people who die in home fires because of a faulty smoke alarm in UK each year

60

Average deaths per year in UK home fires started by a cigarette

Source: UK Department for Communities and Local Government statistics

LIFE HACKS

BABYPROOF YOUR HOUSE

Make life easier for you and baby with our indispensable guide

Having a baby can be one of the most rewarding and satisfying things you'll ever do, but what happens when you bring this bundle of cooing/crying loveliness back into the home? You may think that your house is a domain of peace and tranquillity, but believe us when we say that danger lurks around every (sharp) corner.

You have to think ahead and babyproof your house for every stage of their development. When they're newborn, it's fairly easy to keep your baby safe in the house, but as soon as they begin to crawl then every piece of furniture, cupboard door and piece of fabric becomes a potential hazard.

You could always hire the services of a professional baby proofer, such as Baby Safe Homes (babysafehomes.co.uk), but there are plenty of cheap solutions to make your house safe for a baby that you can easily do on your own.

£14 | \$20
deltababy.be

Delta Baby Floating Mattress

Keeping your baby still during their bath can be tricky, but this floating mattress makes it easier. The baby lies partly in the water, leaving your hands free.



KITCHEN

01 Turn pan handles

When you're cooking, remember to keep the handles of the pans turned in away from the edge of the cooker to make sure young hands can't grab at them.

02 Use rear rings

To be extra safe, always use the rings at the back of the cooker if possible and never leave anything on the cooker unattended.

03 Lock up knives

Any sharp cooking utensils and knives should be kept in drawers (preferably ones fitted with safety catches). This includes cutlery too.

04 Childproof lids

Never put household chemicals into unmarked containers and make sure that any bottles containing chemicals (cleaning products, for example) are fitted with a childproof lid.



£15 | \$23

clevamama.com

ClevaMama Transparent Oven Door Guard

This super-useful transparent cover enables you to still actually see into your toddler-height oven, but reduces the heat from the oven door by up to 50 per cent.

05 Set aside space

If your child loves exploring the kitchen then why not set aside at least one cabinet for them? Pick one away from the cooker and fill it with safe, kitchen-related objects for them to play with – such as wooden spoons or plastic containers.

BATHROOM

01 The elbow test

Always put in warm (not hot) water for their bath. The old fashioned elbow test is a good one or if you want to be technical about it, use a thermometer to make sure the water is between 35 and 37 degrees Celsius.

02 Don't slip!

It goes without saying, but you should definitely fit a non-slip mat in the bath as this will also come in handy for adults if you have a shower attached to the bath.

03 Shallow water

When bathing your little one, you should only put enough water in the bath to cover their legs, which should be between 5 and 7.5cm of water.

04 Run cold water first

Run cold water into the bath first and then add the hot water. This makes sure that the bathwater is never scalding. You could always consider fitting a thermostatic mixing valve to your taps too.

05 Supervised bathing

Another obvious one here, but never leave your baby in the bath unsupervised, however briefly. It's also a good idea to get yourself a good quality baby-bath seat too, but even with that you should never leave them in the bath on their own.

STAIRS

01 Get a stair gate

When your baby starts to crawl, it's time to fit the stair gates. You'll need one at the bottom of the staircase and another at the top, and make sure that the gates always stay shut.

02 Check bannisters

Check the width of the spacing between your bannisters. If it's potentially large enough for your baby to crawl through then we recommend investing in some safety netting.

03 Use the rail

Always concentrate when carrying your baby down the stairs. Keep one hand free at all times and use the hand rail for extra stability if you have one. If not, then get one fitted!

04 Keep stairs clear

Although it's easy to dump everything on them, it's a good idea to keep your stairs free of clutter. When your baby starts crawling it's easy for them to slip on an object left on the stairs.

05 Carpet your stairs

If you have a wooden staircase then think about investing in some carpet for it. Carpeted stairs are less slippery than wood and softer to land on if there are any accidents.



£47 | \$65

dreambaby.co.uk

Dreambaby Retractable Gate

A practical redesign of the stair safety gate, Dreambaby's gate retracts to the side when you don't need it and comes with a pair of brackets for easy redeployment.



£5 | \$7

munchkin.com

Lindam Home Safety Kit

If you're child-proofing your house, this kit is great and has everything you need, from safety catches to door stoppers, corner cushions to socket covers.



LIVING ROOM

01 Get a fireguard

Open fireplaces are fabulous features, but they're possibly the most baby-unfriendly part of a house. Even when the fire isn't lit, make sure it's covered by a secure fixed fireguard at all times.

02 Cover radiators

Radiators can get very hot, so it's worth investing in wooden covers. Alternatively, you could always cover them with a small thin summer duvet when babies are around or just turn the temperature down to a consistent warm setting.

03 Fix furniture

Large items of furniture, like bookcases, should always be securely fixed to the wall or relocated to a child-free space just in case any toddlers try to climb on them when you're not looking. A lot of furniture now comes with its own fixings, but DIY stores will carry bracket sets if you need one.

04 Safety film

Internal glass should, ideally, be replaced. If you must have it, though, then we recommend attaching safety film to all of the panels, just to be on the safe side.

05 Cushion corners

Although they aren't very aesthetically pleasing, it's a good idea to fit corner protectors to the sharp corners of any low furniture. You can get packs of clear ones online that are both reasonably priced and fairly unnoticeable.

LIFE HACKS

THE SMART WAY TO STACK DISHES

The scientific approach to getting sparkling results

Loading a dishwasher isn't exactly what we could call 'work', especially when you compare it to the manual alternative.

Inevitably, though, we all pull out dishes after a wash and are horrified to find that the results aren't as good as we had hoped. Your first thought may be that the dishwashing salt or rinse aid has run low, but a lot of the time it simply comes to how you have placed everything on the racks.

If you want to get the best result every time, there is a surprising amount of strategy that should go into organising your plates, bowls and cups when putting them into the dishwasher. If dishes are too close to each other, for example, then there is not enough space for water to travel and clean everything properly, and some items are best put on the top shelf and not the bottom. Dr. Raul Pérez-Mohedano, a chemical engineer from the University Of Birmingham, has developed a comprehensive method for the best results. Even though all dishwasher racks are different, this guide will show you how to get sparkling results with every cycle.

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Some items are best on the top shelf and not the bottom

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01 The pressure is on

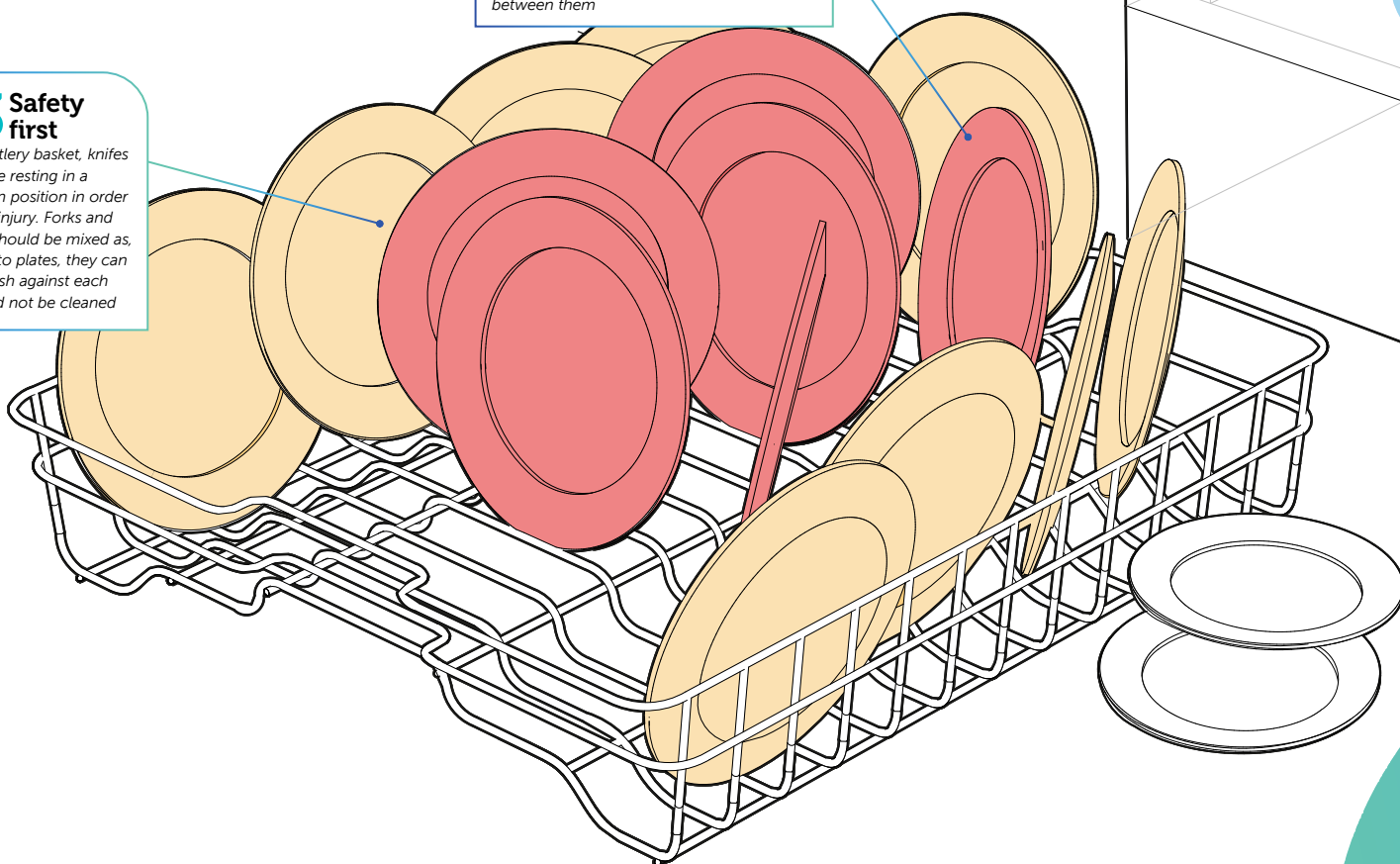
There are two areas: the inside where the pressure of the water will do the cleaning – this is best for carbohydrate-based stains, such as potato. The outside area allows cleaning agents longer to soak, so this is where dishes with protein-based stains should be

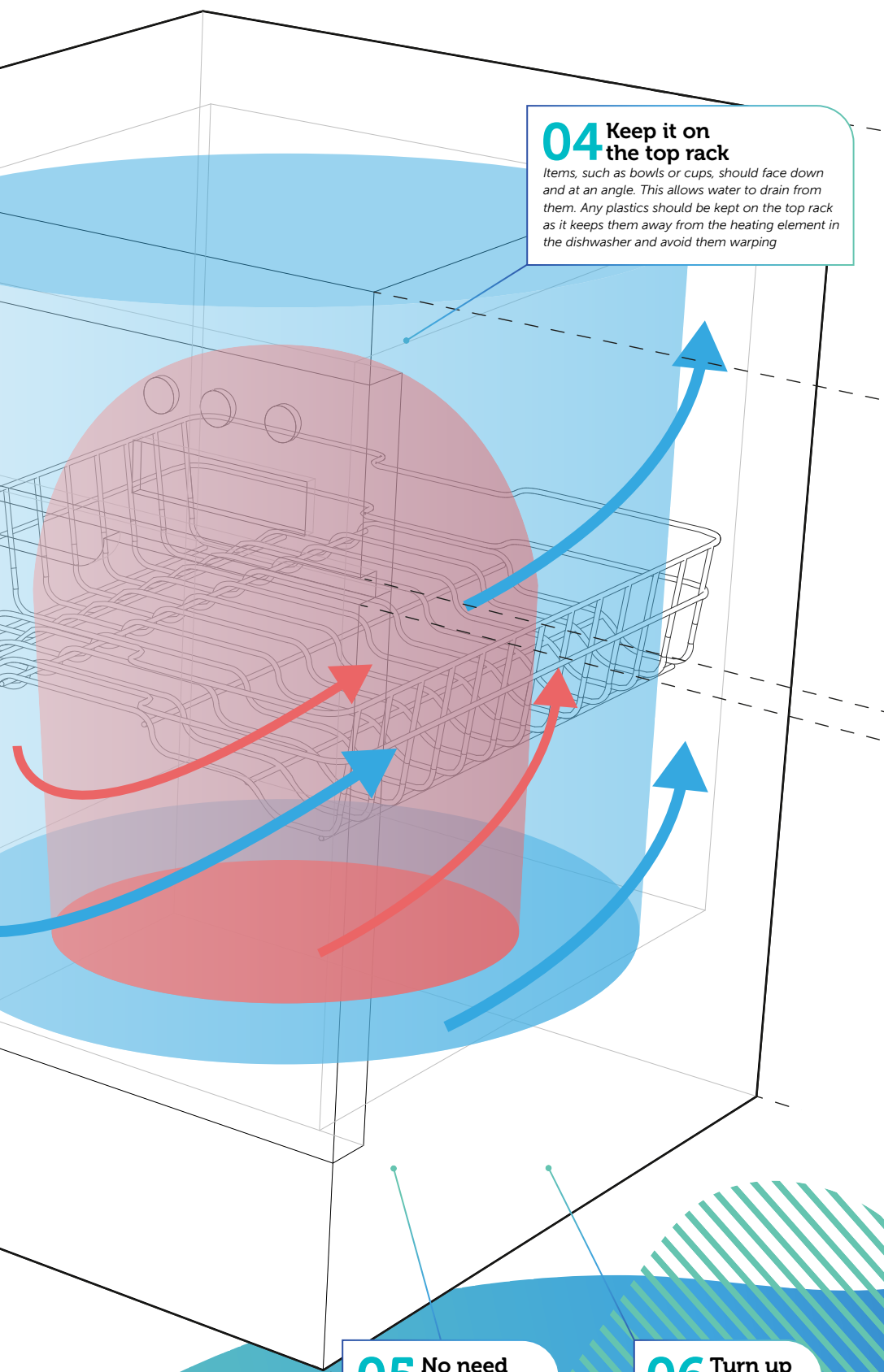
02 Mix things up a bit

If you have different sized plates, mix them up on the rack – if you have a row of the same, uniform size, then they are likely to stack against each other and water won't reach in between them

03 Safety first

In the cutlery basket, knives should be resting in a facedown position in order to avoid injury. Forks and spoons should be mixed as, similarly to plates, they can easily clash against each other and not be cleaned





04 Keep it on the top rack

Items, such as bowls or cups, should face down and at an angle. This allows water to drain from them. Any plastics should be kept on the top rack as it keeps them away from the heating element in the dishwasher and avoid them warping

05 No need to rinse

Some people like to rinse their dishes before sticking them in, but this isn't necessary. As long as you scrape the majority of food from the plate into a bin then there is no need for good rinsing

06 Turn up the heat

Before you start the dishwasher, run the hot tap nearby until the water is heated. A Dishwasher can heat the water itself but this method will save time and possibly energy

5 THINGS YOU DIDN'T KNOW WHERE DISHWASHER SAFE



01

Baseball hats

Check the labels on the hat before doing this, but they are safe as long as they are on the top rack of the dishwasher. Just don't put them in the same load as the dirty dishes.

02 Toys

Just put on a cycle with no detergent and they'll be germ-free. There is always a slight risk of damage so be sure avoid this method for any sentimental items. Obviously, do not do this with battery-powered toys and games.



03

Makeup and hair brushes

This only applies to plastic brushes, ones with wooden handles should be hand cleaned. Remember to remove as much hair as possible to avoid any clogging of the drains.



04

Cleaning supplies

Even cleaning tools needs cleaning themselves once in a while. Dustpans, dusters, sponges vacuum accessories and plastic brushes can all go through a cycle as long as they are plastic.



05

Bathroom items

Soap trays, plugs, rubber mats, showerhead and toothbrush holders can be cleaned along with dishes on a normal cycle.



Images: Baseball cap: Wikimedia Commons, Public Domain. Makeup brushes: shower head: Getty

LIFE HACKS

GROW A VEG PATCH ON YOUR KITCHEN COUNTER

Join the growing trend for indoor hydroponic gardening

Strictly speaking, hydroponics are nothing new, the idea's been around for decades. But new tech, including LEDs, have made it even easier. The idea of hydroponics is to grow plants without using any soil, instead herbs, flowers and other plants are grown in water that is enhanced with vitamins.

NASA has been experimenting in this field as it allows astronauts to grow their own food whilst they are away on long missions. There are a variety of methods when it comes to hydroponics, for example some systems spray a mist continuously at the roots and some have the garden in a circular frame that rotates around a grow light in the centre.

There are a number of benefits to these soilless gardens. The amount of maintenance is lower than a traditional garden, the plants grow quicker and there are fewer pest problems.

Miracle-Gro has released a few hydroponic devices, all grow plants from preseeded pods but each one has different functions and spaces for pods. They're easy to set up, don't take up a lot of space and according to Miracle-Gro's tests, they produce better plants than the ones you can buy in store at the supermarket.

“

There are a number of benefits to these soilless gardens

”

Supercharged LED sunshine

The lamp uses three different coloured LEDs: one for growth, one for bigger yields and one for more flowers and fruit. And it only costs pennies per day to run

Ready in no thyme

Most plants will show within 14 days and can be harvested after four or six weeks. The pod will continue to produce plants over and over for up to six months

£100 | \$150

aerogarden.com

Miracle-Gro Aerogarden Harvest

Grow vegetables, herbs and flowers in weeks without the need of daily maintenance. It takes only weeks to harvest and pods can last six months or more.

Insert the pod

It couldn't be simpler, insert the seed pod into the garden. Then add water and the liquid plant food. No mess and no hassle





Adjustable lights

The lamp arm can adjust up to 12 inches tall allowing for a variety of different sizes of plants. It isn't motorised so you will have to move the arm yourself

Let it grow

The system delivers the water and nutrients when needed, if it is running low on either then the Aerogarden will let you know what needs refilling

Better for you

Miracle-Gro claims that its plant food contains no pesticides or herbicides. It also says that all of its seeds are not genetically modified and are sourced reliably

Making gardening accessible

For someone who can't do gardening due to time commitments, or their house doesn't have the proper space, this is a great device

Select the mode

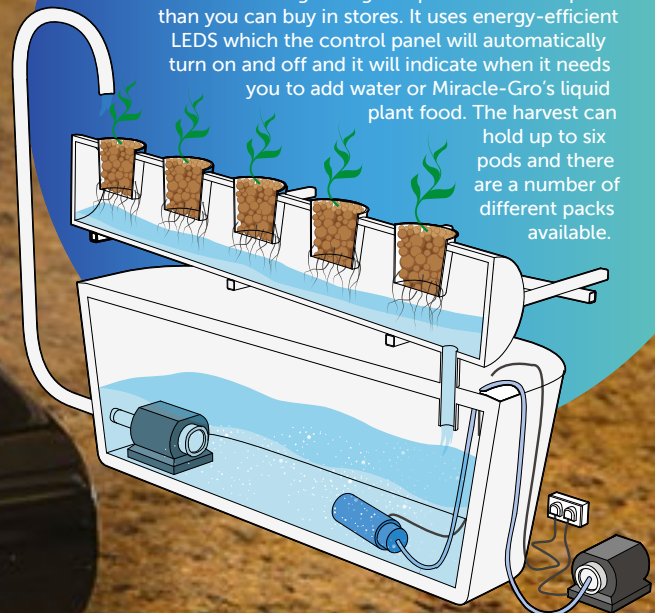
There are three modes to choose from, vegetables, herbs and 24-hour mode. Select which mode you require and the built-in system creates the best conditions for the plants

HOW DOES IT WORK?

The Aerogarden Harvest is a soil-free garden that you can use in your home to grow herbs, flowers and vegetables among others all year round.

Miracle-Gro claims the device is five times faster than traditional growing and produces better plants than you can buy in stores. It uses energy-efficient LEDs which the control panel will automatically turn on and off and it will indicate when it needs you to add water or Miracle-Gro's liquid plant food. The harvest can

hold up to six pods and there are a number of different packs available.



LIFE HACKS

DEEP-FRY A TURKEY

Cook a full-size bird in half the time

You might balk at the idea of deep fat frying a turkey, but is it really that different to making your own KFC? It's perhaps no surprise that this cooking trend started in the USA, where it is fast becoming a popular alternative to the traditional Thanksgiving dinner. Aside from its crispy taste, the main attraction of sautéing a turkey is that it saves a lot of time. Whereas a full-sized turkey can take four to five hours when cooked in the oven, it only takes around 45 minutes in the fryer.

However, as you might imagine, dropping a five-kilogram bird into a boiling vat of oil isn't without its risks. There have been 168 turkey-fryer related fires, burns, carbon monoxide poisonings and explosions in the US since 2002, injuring 672 people and causing \$8 million in property damage, according to the American National Safety Council. But there are some simple things you can do to make sure you don't become another turkey fryer fire statistic, such as wearing protective gear, cooking outside, and having a carbon dioxide or dry powder extinguisher nearby in case of a fire – don't ever use water. If you fancy finding out what all the deep fat-fried fuss is about, follow our simple guide.

“
The main attraction of sautéing a turkey is that it saves a lot of time
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01 Set up your cooking space

Prepare the turkey how you like it, but ensure that it is completely dry for when it goes in the oil. Set up your pot and camping stove outside as far from your house. Make sure it's on a flat surface, so it doesn't topple over. To know roughly how much oil you should put in the pot, place the turkey inside and fill it with water until the whole bird is covered. Once covered, remove the turkey and mark the volume of water on the side of the vat.



02 Time to start cooking

Dry the pot and the turkey before actually cooking. Fill the pot with peanut oil up to the point you marked. Light your camp stove and wait for the oil to heat up. Once heated to the correct temperature for your bird's weight, between 177-204 Celsius (350-400 Fahrenheit), shut off the heat. This is so you can safely put in the turkey in the pot. Lower the bird as slowly as possible as it will bubble violently. Once the bird is submerged, turn the heat back on.

WHAT YOU WILL NEED



PowerX Powder Fire extinguisher

Meeting British standards, dry powder extinguishers are versatile as they can extinguish paper, wood, liquid and gas fires.
£15 | \$20 |



Burnguard Cooking Gloves

These gloves can reach up your forearms to protect you from any splashes, they are machine washable and resistant to grease and steam.
£40 | \$50 |



03 Watch the weather

Using a deep-fry thermometer, regularly check the temperature; when the turkey enters the oil the temperature in the pot will drop a little bit. Always keep an eye on the weather while you cook outside. While rain during a summer barbecue can be a bit of a dampner, cold rain hitting hot oil will make it a spit, which is a health risk. Also, make sure the wind doesn't rise, as this could also knock over the pot, spilling grease everywhere like a medieval siege weapon.



04 Drain off the oil

The turkey is done when the dark meat is at an internal temperature of 80-82 Celsius and all white meat is at an internal temperature of 74-78 Celsius. When the turkey is cooked through, shut off the heat before removing the bird. Slowly lift the turkey out of the oil and hold it there for awhile to let any oil inside drain out, then serve. If you want, the oil can be filtered and reused several times once cooled.

HOW DEEP-FRYING WORKS

We have all had our share of deep-fried food, be it chicken, onion rings or even mars bar. But do you know what goes on inside to make the food dark and crispy? And why is some deep-fried food extremely greasy and unhealthy and others not so much?

Bubbling oil

The bubbles in the oil are not actually because the fluid is near boiling point, rather its steam escaping the food. When the bubbles slow down this means most water has been evaporated and the meat should be cooked though

Crusty outer layer

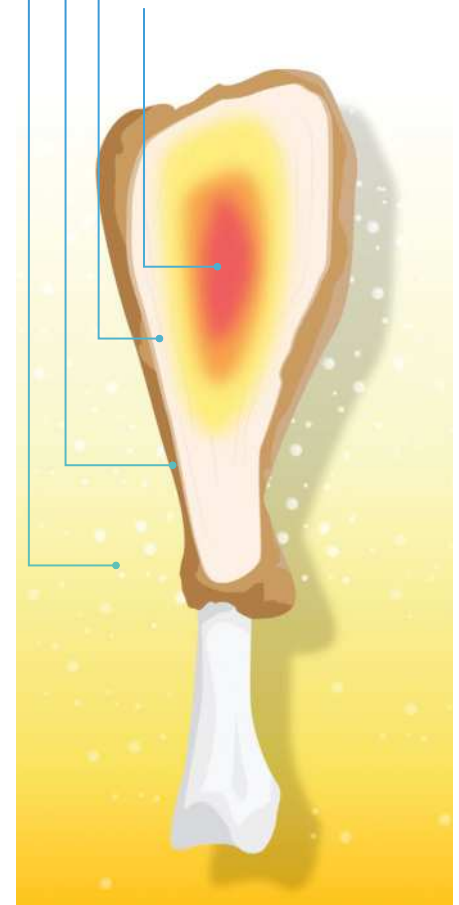
When the meat hits the oil it immediately starts to dehydrate and creates a crusty layer around its outside, which stops any more oil from getting in

A delicate balance

If the turkey is added to oil that is too hot, its outer crust will burn and discolour. But if the turkey is added to oil that isn't warm enough, the outer layer will form slowly and the meat will absorb too much oil and taste greasy

Under the skin

Exposed to an intense heat, the meat is seared by its natural juices boiling and steaming, which struggles to escape due to the outer crust



Deep-fry thermometer

The long sturdy measurer can read between the temperatures of 100-500 Fahrenheit or 40-260 Celcius. The devices comes with a handy clip so you can attach it to pots and leave them. **£5 | \$10 | starfrit.com**



Bayou Grand Gobbler

All you need to start cooking, the pot is large enough for most turkeys and the bundle is much cheaper than trying to buy everything separately. **£75 | \$90 | shopthebayou.com**

LIFE HACKS

MAXIMISE YOUR MOWING

All the tips to give you a stunning lawn in time for summer

With spring finally drawing near, we find our thoughts returning to the part of our home that has most likely been neglected over the winter months: the garden. A place that should serve as a sanctuary of peace and tranquillity, but in reality ends up as a dumping ground for bikes, swings and punctured paddling pools. Our lawns rarely receive the treatment they require to remain lush and green, and commonly end up sporting an unsightly brown and muddy look.

Don't despair, though, as help is at hand. That doesn't mean we'll be round to sort your garden out *Ground Force* style, but we've done the next best thing. We have created this handy guide, packed with tips on how to make your lawn look pristine, and advice on how to ensure you stay safe while mowing it.

“ Our lawns rarely receive the treatment they require to remain lush and green ”



01 Tidy up before you start

Before you even get started with the lawn mower, there are a couple of things you need to do first. Start by going round the garden picking up any loose sticks, branches or stones, as these are all likely to dull the blades on your mower.



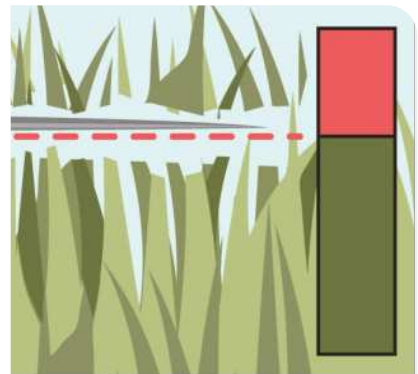
02 Don't go over the edges!

Now trim the edges of your garden carefully, tidying them afterwards with a pair of shears if needs be. You'll now know exactly where the mower needs to go, and it will also pick up the grass cuttings left by the trimmer, too.



03 Keep it neat and tidy

Following the edge of the garden, mow the grass in either columns or rows, working your way slowly down to the other side of the lawn. Turn around at the end and come back the way you came – overlapping slightly on the area you have just cut to make sure you don't miss any bits.



04 Just a bit off the top

Even if your grass is quite long, never take off more than a third of the length of the grass. As tempting as it might be to hack the grass down to the soil, a shorter trim from the mower will keep the grass healthy and ensures that you don't end up with any brown patches.



05 Not too wet, not too hot

Always mow the lawn when the grass is dry, as the blades of grass will be upright, easier to cut and less likely to clump when you mow. At the same time, it's not a good idea to cut the grass in high temperatures, either.



06 Leave it be

If the grass has clumped when you cut it, collect it all up and compost it if possible. If you don't have a compost heap, leave it be, as cut grass is still packed with nutrients and nitrogen that will be returned to the soil, keeping the grass healthy.



£2,800 | \$3,800
toro.com

**Toro TimeCutter
MX4250**

If you're looking for a ride-on lawn mower, this one's a beauty. It cuts grass 45 per cent faster than conventional tractors and has three different speed settings.

5 TIPS FOR LAWN MOWER SAFETY

01 Don't mow your toe Toes and lawn mower blades are not the best of friends, so it's always sensible to wear shoes to protect your feet when cutting the grass.

02 Always be suitably covered On the subject of suitable attire, it's also wise to be wearing long trousers too, as the blades have a habit of throwing out stones and other small objects.

03 Push don't pull This one is common sense really, but never walk backwards while mowing the lawn, as you run the risk of falling over – and you will just look silly.

04 Don't drink and mow Again, probably one that doesn't need much explaining, but however tempting it may be to have a few lunchtime drinks in the sun before mowing the lawn, it's really not the smartest idea.

05 Use a socket adaptor Fitting an RCD socket adaptor between the plug from the mower and the wall socket will protect you if there's a power surge or any other electrical fault.

LIFE HACKS

ROTAVATE YOUR GARDEN IN MINUTES

Why break your back toiling the soil when there's the perfect tool for the job?

If you have a vegetable patch to break up ready for planting, then a rotavator could be a worthy investment. The garden gadget can do all the hard tilling work in a fraction of the time it would take to do it manually with a pickaxe or spade. And while there's definitely some sense in renting one for the smaller areas, those with a big plot and even larger ambitions could find that shelling out for a rotavator now could save them time and money in the long run.

So what exactly is a rotavator? Simply put, a rotavator (also called a tiller) uses a series of spinning rotors used to break up and aerate soil in order to get it ready for planting vegetables and crops. Previously, this is something that would have had to be done with a spade and a garden fork, and a large plot could've taken days to get ready, but now it's something that can be done in a fraction of the time.

This workshop will go into a bit more detail about how to use one, what to watch out for and the other essential kit you'll need to get your garden sorted for the winter.

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A rotavator uses a series of spinning rotors used to break up soil

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WHAT TO DO IF IT KICKS

Using a rotavator, especially when you're tilling new ground, can be hard work. There will definitely be times when the rotavator hits something hard. When it does, it's extremely important that you let the rotavator 'kick' and then gently guide it back on track. Using physical strength to try to control the rotavator will only tire you out, and could cause muscular injury. The more you use the rotavator, the more natural your control of the machine will be.

Adjustable design

The rotavator has height-adjustable handles for ultimate comfort, it also has a height adjustable skid which allows changes in the tilling depth, though it will only dig down a maximum of 25cm



01 Learn your safety routine As there are rows of metal spikes rotating close to your feet, it goes without saying that the first step to rotavational Nirvana is to go through your safety routine. If possible, get an expert to give you a demonstration, as rotavators aren't known for their user-friendliness. Make sure you know where the kill switch is in case of emergencies, and that you are clad in protective gear.



02 Weed out the area If you've got the time then it makes sense to weed the area you're planning to cultivate, as all you'll do when you start rotavating is spread the weeds around. If the weather's dry then you can cut all the weeds with a lawnmower a couple of days beforehand, but if the weather's not so good then cut the weeds a couple of weeks earlier so that the weeds have time to wither and die.

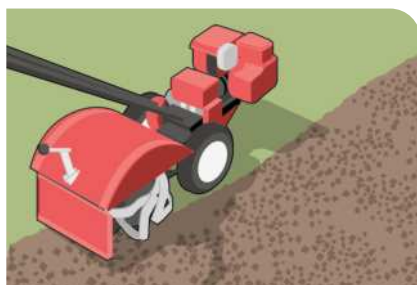


Petrol power

The Handy tiller is powered by a single cylinder, four-stroke Briggs & Stratton 450 series engine, which has a 600ml oil capacity

Removable rotors

Working together, the rotors have a maximum working width of 38cm. But if you are looking for something a little narrower to do some tighter crop work, you can remove the two outer rotors



03 Up and running

And now you're ready to start rotavating. Follow the rotavator's instructions to get it started and then move along the soil slowly, making sure that you keep your hands and feet away from the blades. You can move along in 'strips', similar to how you would with a lawnmower, but you need to make sure that each strip overlaps slightly so that you don't miss out any of the soil. It's worth taking the time and doing this slowly.

04 Going in deeper

It's a good idea to dig down around two to three inches for your first run through, especially if the soil is quite dry as this will just make the job harder. Once you've cultivated the whole area, you'll want to go back over it again (ideally at a right angle to the original lines you did). You'll find it easier to work through the soil the second time, so you'll be able to lower the rotavator blades to dig a few inches deeper.

ESSENTIAL GARDENING KIT

You obviously want to leave your garden neat and tidy for the winter, which means you might be wise to tool up. Here are four essential pieces of kit that should be in every shed.



Stihl Compact Cordless Hedge Trimmer

It's light, making it easy to use, and wireless, so there will be no accidents cutting through cables. Which we've *never* done. Ever.
£200 | \$265 | stihl.co.uk



Billy Goat Blower

Sure you can buy cheaper leaf blowers, but there was something about this one that caught our eye. This blower is lightweight and quiet, well, for a leaf blower at least.
£600 | \$N/A | billygoat.co.uk



Gtech Grass Trimmer

Stylish, batter-powered and incredibly light, Gtech's trimmer is the perfect device for keeping your lawn edges neat and tidy – and you also get free blades for life.
£90 | \$N/A | gtech.co.uk



Bosch Quiet Shredder

While shelling out £280 for a garden shredder is a steep proposition, if you're the sort of person that has to have the coolest kit in your garden, then it's hard to resist.
£280 | \$375 | bosch-garden.com

£300 | \$400
thehandy.co.uk

The Handy 3.5 Garden Tiller

Ideal for allotments or home vegetable patches, this petrol-powered tiller has four rotors, transport wheels for added mobility, and foldable handles for storage.



LIFE HACKS

HOW TO BUILD A SHED

Grab some tools and get your DIY game on

Building a shed is a completely different ball game to assembling flat-packed furniture, mainly because the tolerances used to measure each individual part are not as exact as for indoor fittings. Even if you have a detailed set of instructions, we would advise to check out a few things before you start. Make sure that the windows fit perfectly and ensure that the felt is ample enough to offer the protection you need. Also, you will need a strong base to place your shed on and to be aware that any gaps in the construction will likely cause damp or rain to intrude and damage the shed. Sheds are naturally ventilated so damp should not be a concern, but rain is a nuisance and should be protected from at all times. Find a friend to help you construct the shed, preferably one who is happy with a couple of beers for payment, and the job will be done in no time at all. Now all you need is to gather all of the right equipment, some decent weather and a copy of our guide and you're all set to get building!



Panel power

Shiplap panels line each side of the shed, with the grain and direction of the wood adding additional strength against the elements. They're easier to fit as well!

£260 | \$375
rowgar.co.uk

Rowlinson 6x4 Modular Shed

This mid-range shed is a good size for your storing your tools without taking up too much space. It has two windows – one fixed and one opening.

Solid flooring

The Rowlinson utilises a solid board flooring, something not too common in sheds of this type. It provides better stability and an easier platform to build on

CONSTRUCT A WOODEN SHED



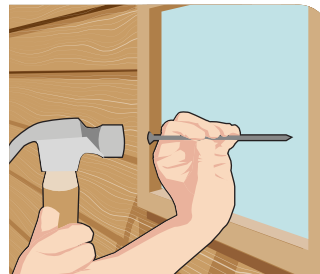
01 Prepare the ground

You should aim to keep the shed off the ground using deck piers if possible, as standing water on the ground will be absorbed. It's also imperative that you lay the entire base of the shed on flat ground to make it easier to align the shed panels correctly.



02 Building the walls

Start with the back panel and place it on the base, but do not attach it to the base just yet. The panel with the door must be placed last, so keep this in mind as you build. Use a timber batten to keep the panels aligned if you are unable to hold the panels in place.



03 Stabilise it

Place a screw at the top, middle and bottom of the corner joint where the panels meet. It's advised to add screws into the bottom of the panels if your shed is bigger than average to stabilise it, but, for now, we need to use these screws to keep the panels level.



04 Fit the roof

Fit the roof support beam across the top of the shed, slotting it into the grooves left by the panels. Use screws to attach an L-shaped bracket, which should keep the beam aligned correctly. Mark the beam with a pencil where you want the roof panels to sit.



Styrene glazed

Shed windows tend to be flimsy and usually scuff easy, but with the styrene glazing used here, most bumps and scratches won't appear without a substantial impact

YOU WILL NEED

A power drill or electric screwdriver

Claw hammer

Tape measure

Spirit level

Retractable knife

Metal ruler

Builder's square

Safety goggles

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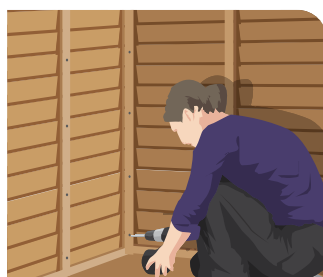
Any gaps will likely cause damp or rain to intrude and damage the shed

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05 Add remaining panels

Lift the roof panels and slot them into place. You can choose to secure them in place with either screws or nails. Apply the felt on to your roof, using a Stanley knife to cut off material that overlaps the corners before fitting.



06 Build then place

Only when the walls and roof are in place, physically attach the shed to the base. Ensure that it is square and correctly put together by using a spirit level on the edge of each panel. Use screws to attach the interior and exterior of the panels to the bases.



07 Time to install the windows

You can now slide the window into place and rest it on the sill. Nail or screw some beading into place to secure it. Only after everything has been fixed should you remove the protective film from the main window component.



08 Finishing touches

Your shed is nearly ready, but we recommend adding an end beam to the edges of your roof. They can provide extra cover for the felt against wind and rain. A thin beam of wood will work, so feel free to attach with nails or screws depending what you have to hand.

LIFE HACKS

HOW TO TAKE YOUR SHED OFF THE GRID

Install a solar panel to power up your tool shed

12-volt battery

Picking the right battery for the job shouldn't be that tricky, but one that was recommended to us was the Genesis NP 100. Obviously it's a 12V battery and, therefore, perfect for our needs, and its 100Ah (amp-hour) capacity means that you'll be able to store up plenty of juice for those darker days.

£40 | \$57 | enersys-emea.com

SPS lighting kit

One of the main purposes of a solar panel linked to your shed would be to provide light, and this all-in-one kit is just what you'll need. It comes with two bulbs and holders, ten metres of cable, a switch and a fuse. Because the bulbs are energy-saving ones, they manage to kick out 60 watts and not too use much power.

£40 | \$57 | maplin.co.uk



PLAY IT SAFE

There are no restrictions when it comes to installing a solar panel system on your shed, but common sense has to play an important part, though. Research everything thoroughly, speak to a professional technician to make sure your doing everything correctly and include the right circuit breakers to cut the power in the event of an accident or power surge. Finally, if the shed is going to be accessible to youngsters, ensure that everything is tucked away in a safe place, away from the kids. As with everything electrical, it's much better to be safe than sorry.

Solar panel

Obviously, the main piece of kit you'll need is the solar panel itself. To keep things nice and simple, we recommend you get a small panel to start with – which will be easily enough to run lights and a few sockets in your shed. For this example, we're plumping for a 10w model, but feel free to go a little higher if you'd prefer.

£20 | \$50 | sunstore.co.uk



The humble shed, once just a small repository for garden tools, broken furniture and spiders, has now become a worthwhile addition to your home.

People turn them into pubs, meeting rooms cinemas or even retro gaming caves, but if you're thinking of bringing your shed kicking and screaming into the 21st century then we've got just the project for you.

Sure, you can run an extension cable out from the house for electricity in your

shed, which is fine until you run over the lead with a lawnmower or the kids trip over it and bring the whole lighting system crashing to the ground, but just think how much cooler it would be to have your own electricity rig set up in your shed and have it solar-powered?

This workshop will guide you through the equipment to buy and the (relatively) simple set-up needed to have solar-powered lights, plugs and, in fact, anything you like in your shed.

Solar panels are easier to install than you'd think



Charge controller

You'll also need a charge controller, which takes the electricity from the solar panel and transfers it to the battery. There's a wide variety of shapes and sizes to choose from, but EP's Solar View Star range is perfect for the job, as the LCD display lets you monitor the state of the whole system with ease – and it also comes with a range of safety features, too.

£60 | \$70 | epsolarpv.com





01 Catching those rays

The first thing to do is attach your solar panel to the roof of your shed. Some panels, like the one pictured above, come with their own brackets to help with attaching them. Make sure that you attach the panel to a south-facing roof if possible, and ensure that the panel isn't ever in the shade – trim any trees or overhanging bushes if needs be. The solar panel isn't going to be useful if direct sunlight is being blocked.



02 Controlling that charge

The next piece of kit you'll need is the charge controller, which will need to be attached to the wall of your shed. The controller takes the electricity from your panels and stores it in the batteries you have connected to it. It's important that you follow the controller's instructions when connecting everything up. It's marked on the controller where you need to insert the positive and negative connections and where to attach the wires out to the battery.



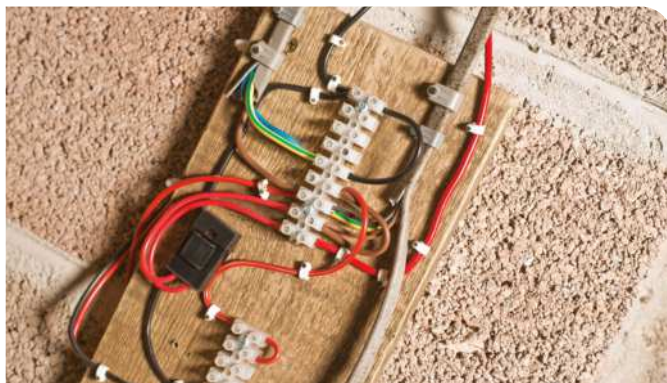
03 Wiring it all up

The wires coming in from the solar panel will be standard cables with positive and negative wires, so you can use a standard 13-amp cable to connect everything up. The next connection is from the charge controller to the battery, so (using the 13 amp cable) run the positive from the controller to the positive on the battery and vice versa with the negatives. As it's a 12-volt system, you need to make sure that the batteries match the same voltage as the panel.



04 Blowing a fuse

When you are connecting up the wires for both the battery and the main feed out, it's important to add a small fuse into the loop for added protection against surges and the like. You want to look out for blade fuses for this one. If you don't know what they look like, you likely have them installed your car connected to the live wires using spade connectors. We would recommend a 15-amp fuse for the battery and a 20-amp fuse for the main feed



05 Connecting everything up

Run the two wires (positive and negative) out to a standard wire distribution block and then connect them to the first two points. You can run off cable from the other side to various plugs and devices that you want to run from the panel. Just make sure that when you add something on the top connections of the block that you also run a short positive and negative line to the next two blocks to continue the live connection – as shown in the image here.



06 Let there be light!

If you want to add any light switches, then we suggest that you run the negative feed straight through from the distribution block through to the actual light itself, but put the break on the live feed. Then, when you press down the light switch it'll turn on the light (hopefully, anyway). Just make sure that you buy a 12V lighting kit – and make sure that you use energy efficient bulbs, which could use just 22W per hour.

LIFE HACKS

FIX A PUNCTURED BIKE TYRE WITHOUT A REPAIR KIT

Feeling a little flat?

Cycling is most definitely on the rise – it's impossible to head out onto the roads on a warm day without spotting a train of Lycra-clad road racers. This is a good thing, but if you're one of those cyclists who's stuck in the middle of nowhere with a flat tyre then it's not quite so good.

We obviously recommend you take a puncture repair kit with you at all times, but there will always be times when you

have forgotten it or run out of patches, so if you're stuck with a puncture and no kit, what do you do? Thankfully, there are a few solutions out there that you can use to get you fixed up and back on the road. With the exception of the Patchnride though, these are temporary fixes, and although they should get you home in one piece, it's wise to take it steady until you can get your bike properly fixed.

“Stuck with a puncture and no kit, what do you do?”

METHOD
01

PLUG THE HOLE WITH LEAVES



01 Tyred out Let's assume, for argument's sake, that you've headed out on your bike without a repair kit or a pump. Your tyre is flat and you're stuck in the middle of nowhere, so what do you do? Well, for starters, remove the wheel with the puncture and take off the tyre.



02 DIY, Bear Grylls-style Collect lots of grass and leaves and pad out the tyre by filling it with the foliage – moulding them to the outer part of the tyre and working inward. You want to create a solid cushion so fill the tyre by compressing the filling and distributing it evenly around the tyre.



03 Safe and sound Reattach the tyre to the wheel – taking care that the grass/leaf mixture doesn't fall out as you do – and then fit the wheel back onto your bike. It's not an elegant solution, but it will get you home alright. To be on the safe side though, take it steady and you should be fine.



£34 | \$35
patchnride.com

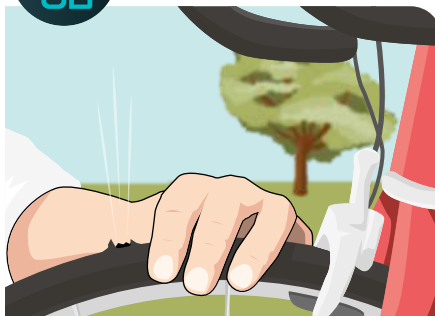
Patchnride

The puncture repair equivalent of keyhole surgery, this gadget can repair a tyre without removing the wheel. Available to preorder now, the Patchnride will launch later this year.



METHOD 02

USE THE PATCHNRIDE



01 A patch made in heaven
A brand new device for the cycling market, the Patchnride claims to get you back on the saddle in less than 60 seconds after getting a puncture, so here's how it works. First locate the puncture on your wheel and then remove the cap from the Patchnride device.



02 Easy does it
Squeeze the sides of the tyre either side of the puncture and insert the pointed end of the Patchnride into the hole. Pull back the slider on the side of the Patchnride and then push it forward to insert the patch – this will attach itself to the puncture on the inner tube.



03 Where's the catch?
Now simply pump up your tyre and you're good to go. The Patchnride is designed to repair inner tube punctures of up to 3mm in size and claims to work with any tyre or inner tube. Too good to be true? Well, the technology is both sound and innovative and the only real downside we can see is that it might be a bit pricey to keep purchasing the repair patch pods.

METHOD 03

TIE A KNOT IN THE INNER TUBE



01 A wheely good idea
An alternative method to get you out of trouble, especially if there's no vegetation around, is even simpler. Again, remove the wheel from the bike and this time take out the inner tube. Locate the exact point of the puncture and cut the inner tube right through the middle of it.



02 A knotty problem
You now have to tie the two ends of the inner tube you have created together to form as tight a knot as possible. It's important here to keep as much slack in the tube as you possibly can, this is so you are able to get it back in the wheel – try to make sure you only use a minimum amount of the tube.



03 Practice makes perfect
Pump some air into the tube to check for leaks – you may need a few attempts at the knot to get it just right. When it's airtight, put the tube back into the wheel. Remember it will be hard as the tube is smaller and make sure you don't inflate the tube to its usual pressure, as this is just a makeshift mend to get you home.

LIFE HACKS

THE SIMPLE WAY TO CHANGE A CAR TYRE

It's the stuff of driving nightmares, but our workshop is heaven sent...

There's nothing worse for car owners than hearing that awful repetitive thud coming from one of your wheels that signifies that you've got a puncture. And, for some unexplainable reason, it usually seems to happen when you're in the middle of nowhere, your phone battery is flat and it's chucking it down with rain in the middle of the night.

The reality, though, is that changing a car tyre isn't quite the nightmare you might think it is. Sure, there are definite things you need to do – as well as a whole long list of things to avoid doing – but if you're careful and follow our instructions, then you'll be back on the road in no time at all.

We've also got a round-up of the kit that's sure to make it even easier for you, from a cordless impact wrench to remove stubborn nuts to an inflatable jack that's powered from your car's exhaust. If you want to repair your puncture in style, then you've come to the right place.

“Changing a car tyre isn't quite the nightmare you might think it is”



01 Get yourself level

If possible, make sure that the car is on a level part of the road before changing the tyre. If you're on a main road, put on your hazard lights and make sure that the car is switched off and the handbrake is on. Now, if possible, remove the wheel's hubcap and use a wheel brace to loosen the nuts on the wheel (but don't remove them). If the wheel has a locking nut, then make sure you know where the key for it is.



02 Jack it up

Now get the jack ready and look underneath the car to find the jacking point for that corner of the vehicle – they're usually close to the corresponding wheel arch. If you can't find one then look for the best spot along the car's sill for the jack to go. Lift the car slowly and carefully, and if the jack is lifting at an angle, then lower it and position it in a better location until you're sure it's lifting up straight.



WHEELY GOOD GEAR



Westfalia Car Jack

This is genius. 60 quid buys you an inflatable cushion that can lift over two tons up in the air. The advantage of this car jack over traditional ones is that it can lift two wheels at once, it's perfect for uneven and soft surfaces, and it connects straight to the car's exhaust to inflate it. Brilliant.

£60 | \$85 | westfalia.net



Ring 12V Air Compressor

An essential piece of kit, a battery-powered air compressor can inflate a tyre in just under three minutes. All you have to do is set the pressure gauge, attach the nozzle and that's pretty much it. You can also use a compressor for bike tyres and inflating camping gear, too.

£25 | \$30 | bit.ly/ringauto



Holts Tyreweld

So you've got a puncture and you then remember that your spare is flat. What do you do? If you're prepared for anything then you'll have a can of this in the back of your car. Attach the can to your tyre's valve, fill up the tyre with the temporary solution and it seals the puncture – it's easy as that.

£10 | \$14 | holtsauto.com



Clarke Impact Wrench

Surely one of the most irritating and embarrassing scenarios is that, after a puncture, you're unable to remove the nuts with a brace. The solution is costly but guaranteed to make the job a lot easier. This impact wrench whizzes round at up to 2000 RPM and has a maximum torque of 200Nm.

£70 | \$100 | bit.ly/clarketools



03 Swapping the wheels

When you're sure that the wheel is completely off the ground, remove the nuts and lift the wheel off of the axle. Now slide on the spare tyre and securely attach it with the wheel nuts. You should tighten them all gradually by hand and in a star pattern – so always putting the next nut in across from the last one, doing a full clockwise turn before moving over to the next nut.



04 Get back on the road

Using the wheel brace, continue tightening the nuts (still using the star pattern) until you've tightened them as much as possible – try not to use too much force as this can unsettle the jack if you're not careful. Now, lower the car to the ground and remove the jack from underneath the car. Before you put the hub cap back on, though, go around the nuts one last time tightening them as much as possible.

LIFE HACKS

HOW TO JUMP-START YOUR CAR

Recharging a car with a flat battery is a lot easier than you think

Having a car with a flat battery is something that most of us have experienced at one time or another. Often it's at night, in the middle of nowhere when it's chucking it down with rain – like something out of a horror film. But it's also one of the few things that can go wrong with a car that you can sort out with a minimum amount of fuss and mechanical know-how.

There are several ways to get your car up and running, ranging from the basic jump-start to using modern battery packs like the brilliant Cobra JumpPack – no gadget fan will be out in the cold with a dead battery again if you have one of these in your boot.



£60 | \$N/A
streetwizeaccessories.com

Streetwize Power Bank and Jump Starter

This Jump Starter is the perfect solution to any risky jump-starts. It's small enough to be portable, but is still manages to squeeze in a 7,500 mAh battery with three USB ports.

Light up

There's a handy light on the front to help you connect the Cobra in the dark or you can use it to flag for help

Easy connection

These standard jump leads simply connect to the back of the battery pack

Gadget friendly

Using the USB port, you can charge your phone or tablet through the Cobra

Reusable

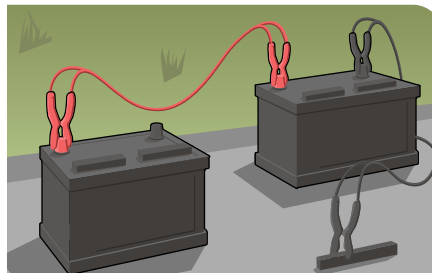
While the JumpPack is good for multiple uses, it comes with a 12V car charger so you can top it up whilst on the go

METHOD
01

Recharge car to car



01 Jump to it All you'll need for this is a willing and kind person with a working car and a set of jump leads. Start by parking the two cars as close together as possible so that the jump leads will reach between the engines, then switch off the ignition in both cars.



02 Think positive Attach the red lead to the positive terminal on the working battery and then the positive terminal on the flat one. Now connect the black lead to the working battery, but make sure the other end is attached to an earthing point on the other car and not on the battery.



03 The spark of life Start the engine of the working car, leave it running for a minute and then try the ignition on the other car. If the engine starts, let it run for a couple of minutes before removing the jump leads. When you do remove them, do it in reverse order; so start with the black lead.

JUMP-START WITH A BATTERY PACK



01 Battery power to the people

For peace of mind, there's nothing quite like having a portable battery pack to hand and the Cobra JumpPack is easily one of the best. To use it, first make sure that you disconnect all the battery cables from the JumpPack.

“
Have a
battery
pack
”



02 Get connected

Now connect the red clamp to the positive terminal on the car's battery and the black clamp to the negative terminal. Reconnect the battery cables to the JumpPack and make sure they're firmly attached.



03 The key to success

Turn the ignition key for around three seconds and the car's engine should fire into life – if not, wait for around a minute before trying again. If all's good, disconnect the clamps from the battery and then leave the engine ticking over for a few minutes before heading off.

METHOD 03 Perfect push start



01 Get into gear

If you don't have a battery pack or jump leads, or can't find anyone with a pair, then you're going to have to resort to the push start. Start by turning on the car's ignition, put the car into second gear and then push the clutch pedal to the floor.



02 Roll on down

If you're lucky enough to be parked on a hill then let the handbrake off and roll down – obviously when it's safe to do so – until the car reaches around ten miles per hour. Then let your foot off the clutch and press the accelerator pedal to make sure you don't stall.



03 Call for backup

If you're parked on the flat then you'll need some help pushing it. Again, wait until the car reaches about ten miles per hour before releasing the clutch and don't forget to let off the handbrake or else you could suffer the anger of those who are trying to push you!

LIFE HACKS

COVER UP A CAR PAINT SCRATCH

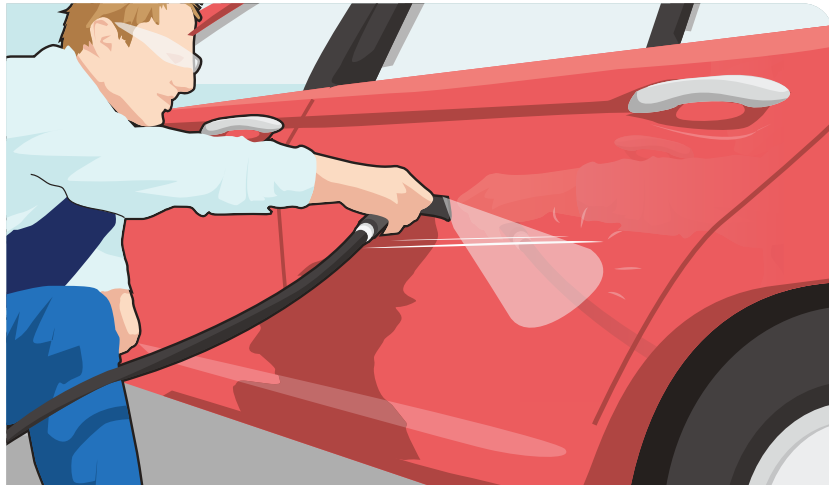
Buff out the body work and restore your pride and joy

There's nothing more irritating than getting to your car and spotting that it's acquired a scratch or two. Rather than take it to a bodyshop, though, which could end up costing you several hundred pounds, we suggest that you tackle the job yourself.

Like most things regarding DIY, the more effort you put in and the more care you take, the better the end result will look. While you probably can get away with just painting over the scratch line with a pot of matching paint, it could look ugly and rust could be bubbling away beneath the surface.

Although there's a definite right and wrong way to do it, repairing minor scratches and imperfections in your car's paintwork is not as difficult as it sounds. Especially if you follow our fairly easy step-by-step guide...

“The more care you take, the better the end result”



01 Preparation is everything

The first thing you need to do is to make sure that the entire car is properly washed and dried before you start this project. If your car has even the slightest bit of dirt on it then you could end up making more scratches while you're polishing the afflicted area. It's worth paying special attention to the area that you're repairing, and it goes without saying that you should do a final check to ensure that all dirt and debris has been removed from the scratch area before you start.



02 Smoothly does it

Now you want to smooth out the area around the scratch, getting to the bottom of it without causing any additional damage to the paintwork in the surrounding area. Start by using 1,500-grit sandpaper wrapped around a sanding pad and then, when you've reached the bottom of the scratch, switch to 2,000-grit to smooth out the scratches caused by the rougher sandpaper. Rinse the area to remove any further debris or dirt and then wipe it clean using good quality – and clean – cloths, preferably microfibre ones.

THE TOOLS FOR THE JOB



T-Cut Original

T-Cut is the name most people think of when it comes to touching up a car's bodywork, and the formula is still going strong. For small, shallow scratches, this is still probably the best you'll get. £5 | £7 | t-cut.co.uk



Turtle Wax Premium Scratch Repair Pen

The easiest repair for a small, thin scratch is a repair pen, as all you have to do is guide the it along the scratch and the resin dries in just ten minutes. £10 | £10 | turtlewax.com



Quixx High Performance Paint Scratch Remover Kit

This kit features all you need for a range of scratches, including tubes of polish and finish, two polishing cloths and strips of fine sandpaper. £10 | £15 | quixx-usa.com



03 Aye, there's the rub

Next you need to apply rubbing compound to the area, which will take off some of the surface paint, but it also smooths everything out and prepares it for being waxed. You can use a pad here and a bit of elbow grease, but if you can get your hands on an orbital buffer, then that will do the job quicker. With the buffer on its lowest setting, polish the area for around ten seconds. Then increase it to 2,000 RPM for a minute, but make sure that you don't buff in the same area for more than a second or you could go through to the next layer of paint.



04 Wax on, wax off

Once you've finished with the rubbing compound, clean the area immediately before any remaining rubbing compound dries out – it's much harder to get it off the surface of the paint when it's dry. Now, using either a (clean) pad or the buffer again, wax the entire area you've repaired to seal the paint and protect it. All you have to do now is wash the area one final time to make sure that the scratches are completely gone and that the wax has worked and that the area is waterproof.



Chipex Road Rash

The Chipex method works by matching your car's exact paint colour then blending the in new paint to ensure that the finished product looks as good as the day you brought your beloved car. £35 | \$50 | chipex.co.uk

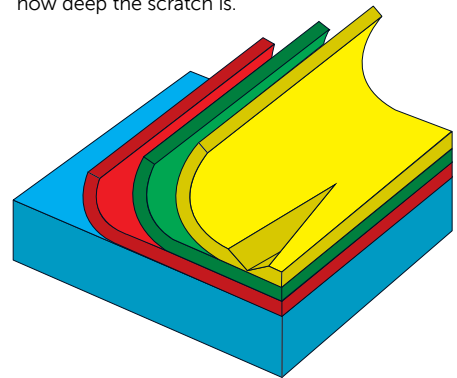


Ryobi 18V Orbital Buffer

Buffing up your car's paintwork can be a long and boring job – especially if you've got a lot of it to do – so take the strain out of the job with this battery-powered orbital buffer. £70 | \$50 | uk.ryobitools.eu

PEELING BACK THE LAYERS

No matter what car you drive, the basic make-up of the paint that covers it is fundamentally the same. First, the bare metal is covered with primer (usually just a single coat) and then the paint itself – the quality of the paint will determine how many coats are needed – and then it's just the clear coat on top of that. This is a layer of clear resin that helps to prevent your car's paint from fading in the sun and also improves the colour itself and makes it shine. To help you when it comes to repairing a scratch on your car's bodywork, it does make sense to understand the various layers, as different techniques are needed, depending on how deep the scratch is.



Clear Coat

This is the first layer of paint on the car, and if a scratch has only penetrated this layer then it's moderately easy to repair. It can be just polished out with compound, but make sure to only polish the smallest area possible to avoid any respraying.

Base Coat

The Base Coat layer is literally the coloured paint itself, to repair this layer you'll need to either blend in the surrounding paint with a orbital buffer and some rubbing compound or get hold of a pot or can of paint that matches the colour. If you're struggling to find an exact match then check on your car's log book, owner's manual or it might well be on a plate attached to the car's bodywork – which is usually found in the engine compartment.

Primer Coat

If the scratch is deeper still and has gone down to the third layer of paint, the Primer Coat, then you will need to get hold of some primer paint to touch up the bottom of the scratch. Using a good brush, paint in the primer to cover the whole of the scratch and then simply sand away any overrun. After that, just follow the same instructions as the Base Coat step in this tutorial scratch to finish the job.

Sheet Metal

A Sheet Metal scratch is the worst one, as that means that it's deep enough to go right down to the bare metal. You've got to work fast with a scratch like this, as if any moisture gets into the metal and takes hold then you'll have rust before you know it – which is extremely hard to completely eradicate.

LIFE HACKS

THE FASTEST WAY TO DE-ICE YOUR WINDSCREEN

Best methods put to the test

When you're running late the last thing you want to see when you get to your car is that the windows are all iced up. Everyone has their own method to get rid of it, some are faster than others and some are safer. But there is a lot of misinformation online as to how you can remove it safely, some of the methods posted can even end up damaging your vehicle. We get that you want to be in your car and on your way as quickly as possible – no one wants to spend too long outside in the cold trying to clear the ice – so we've tested some of the classic methods to see which one will save you the most time and get you in your car and on your way safely and quickly. No matter the method, you should take your time and make sure every window is clear. Before you drive off, check all important areas.

“ No one wants to spend too long outside in the cold ”

METHOD 01



Leave the car running

The simplest way to defrost your windscreen is of course to just start the car, turn the heating up, and wait. However, this method actually takes the longest and may have been the most expensive, sacrificing precious fuel in the process. To speed thing up, point the fans upwards and make sure the rear window heating is also on. Whatever you do, don't leave your car to de-ice like this - numerous cars are stolen each year because owners left them unattended.

Time taken to defrost 10-15 minutes

METHOD 02



Spray some de-icer

You can buy a can of de-icer for around £2 from your local petrol station, supermarket or car part store. Just spray the de-icer over the windows, it should take a couple of seconds for it to get to work. If you go around the car window by window, by the time you get all the way around you can start wiping away the residue. Use a squeegee or a soft-bristle brush to wipe away any leftover ice to avoid scratching the glass.

Time taken to defrost 3 minutes

5 GADGETS TO KEEP IN YOUR CAR THIS WINTER



Handpresso Auto

Plug this into your car's cigarette lighter, add cold water and a ESE coffee pod then you'll have a hot cup of coffee in a couple of minutes.
£140 | \$200
handpresso.com



Heated car seat with lumbar support

What's better than a heated car seat? Well how about one that makes the drive as comfortable as it can be.
£36 | N/A
streetwiseaccessories.com



Ember travel mug

This smart thermos keeps your hot drink at the exact temperature you want for up to two hours. You can also adjust it with the tap of an app.
£180 | \$200
ember.com



Use an ice scraper

Make sure you use a proper ice scraper, not just some piece of plastic you have lying around. Ice scrapers are typically plastic with a large flat blade, these aren't sharp but they do the job without damaging your car. Use short strokes and lean in when scraping as it could take a bit of force to clear some of it. If you want to speed this method up, turn on your car's heating and direct it at the windows, this will help loosen some of the ice.

Time taken to defrost 5 minutes



Plug in dashboard heater

The most high-tech option is a portable dashboard heater, like the £15 Blackfire Dashboard Heater/Cooler. A standard 12V socket-powered heater is like a turbo-booster version of your car's in-built heating. Plug the heater into the cigarette lighter socket and point it towards the window. Once you are sure the ice is gone, use your windscreen wipers to remove any residue. After all the ice is off you can switch the heater to its cooling setting to demist the windows.

Time taken to defrost 8-10 minutes

TIPS TO KEEP IN MIND

- ✓ **Be patient**
Put aside an extra 10-15 minutes in the morning for de-icing, how long it takes varies each day but it should always be done properly.
- ✓ **Don't walk away**
If you are going to leave your car for whatever reason, remember to lock it. An open car with no driver is a thief's dream.
- ✓ **Avoid smudging windows**
If the windows mist up, do not use your hands to wipe it away – use a cloth. Hands leave smudges that could obscure your view.
- ✓ **Keep it cool**
If you keep your car door windows slightly open when removing the ice, then the rear and front ones will stay mist free.

DON'T TRY THESE AT HOME

- ✗ **Pour boiling water**
When the hot water touches the glass, the liquid suddenly expands and then contracts, this causes any small chips or scratches to turn into cracks.
- ✗ **Use a credit card**
Some places have recommended using CDs, credit cards and other flat surfaced objects to scrape away ice, but this could lead to scratches in the glass.
- ✗ **Use vinegar**
Each brand of vinegar varies in strength so it's hard to know exactly what you're getting; if it's too strong then it can damage the paint on the car.
- ✗ **Use windscreen wipers**
If you don't have anything to scrape the ice do not use your wipers, they are meant for brushing and this will only damage them.



EE Mini mobile Wi-Fi

Never lose signal with this Wi-Fi generator. It works with up to 20 devices, so both the driver and passengers can use it. £60 + Pay as you go! \$N/A - ee.co.uk



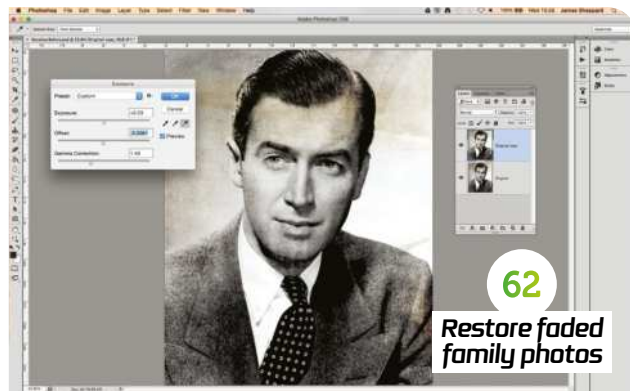
Cobra car jumper

This fits easily into a glove box and can store enough power to jumpstart your car in an emergency. It can also be used to charge gadgets. £80 | \$120 cobra.com



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Turn your phone into a hologram projector



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Restore faded family photos



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Turn your tablet into a picture frame



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The simple way to install a ceiling speaker



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Stop hackers spying on your webcam



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Make any photo 3D



TECH TIPS

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LIFE HACKS

TAKE A STUNNING TIME-LAPSE VIDEO

Compress hours into seconds with these simple tips

When it comes to capturing a scene on video, sometimes simply scanning the horizon with your camera is a great choice. But to create an indication of time passing and to show more of the landscape than a short clip can capture, a time-lapse video is an ideal alternative.

Setting up your camera (and most importantly, keeping it still) will allow you to capture hundreds of photos, which can then be condensed down into just a few seconds or minutes worth of actual video and capturing the broader feel of the location.

The key to a good time-lapse video is finding the right settings on your camera. If you're capturing for long periods of time, you'll need to be sure that the light settings are appropriate for every kind of light you'll be recording. Plus, if you plan to capture for a few hours, you'll need to ensure that your camera's battery is going to last. Once the basics are down, you can start taking things further – very slowly and smoothly moving your camera as the shoot goes on can create an amazing panning effect, while editing apps can offer more control.

£3,800 | \$3,800
sony.com

Sony a7S

This high-end camera is perfect for shooting great time-lapse videos. Boasting enhanced sensitivity, you'll get great results in all lighting conditions – you can shoot in 4K, too.



£70 | \$97

benroeu.com

Benro IT15 Tripod

For any time-lapse, a tripod is essential. The IT15's legs can be folded back through 180 degrees for ultra portability, and the three leg stops allow huge flexibility in shooting heights.



SIMPLE TIME-LAPSE VIDEOS WITH LAPSE IT

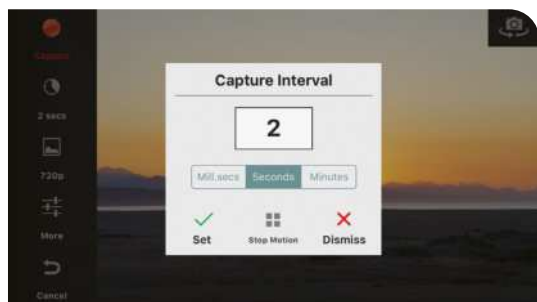
While the iPhone does offer a built-in time-lapse option in the Camera app, this comprehensive app has more options, more control, and lets you edit your movie manually ahead of exporting your finished masterpiece. Before you start shooting, you can set the exposure, focus, white balance and zoom, just as you would expect on a dedicated camera. You can choose the interval and the time scale (in seconds, minutes or hours) – so all you really need to do is set up your phone on a tripod and hit the Capture button. Simple!

£13 | \$19

esynic.com

ESYNiC Intervalometer

Simply set the interval between each photograph, plug it into your camera and hit Start. The intervalometer will do the rest, so you can sit back and relax.



HOW TO SHOOT A TERRIFIC TIME-LAPSE



01 Planning is everything

Before you start to even think about shooting, you need to get prepared. There's no point deciding to record a sunrise, and then turning up five minutes before it starts. Scout out locations, arrive early, and take your time setting up your equipment.



02 Take your time, pick your scene

When you arrive at the location, you might want to get set up and begin straight away. Don't do it! Take your time and walk around, taking in the scenery. Picture how your scene will change and decide the best direction to shoot, and the best position to set up your equipment.



03 Weigh down your tripod

If you're using a fairly light tripod, use bags, rocks or other heavy items to weigh it down and stop it from moving. If a strong gust of wind makes your camera move in the middle of the shoot, it can ruin everything and make the hours you put in a total waste.



04 Shoot in manual mode, and in RAW

It's tempting to set your camera to shoot in Auto mode and leave the image format as JPEG, but you'll have far less control. Tweak the settings manually until you're happy, and lock them in place for every shot. Capturing in RAW will mean you can edit the images more easily.



05 Choose the right time delay for your shot

Depending on what you're shooting, you should consider the time delay between each shot. We recommend the following:

- Slow-moving clouds 10-second intervals.
- Normal clouds 5-second intervals.
- Fast-moving clouds 3-second intervals.
- People walking 2-second intervals
- Moving sun on a clear day 30-second intervals.
- Night landscapes 20-second intervals



06 Edit it in a powerful app

When editing your snaps into a time-lapse video, first have a check that the photos all look how you want them to. Edit in an app like Photoshop Elements, import the images into iMovie or Premiere Elements, add the images and adjust the time interval to create your movie.

LIFE HACKS

ADD SPECIAL EFFECTS TO YOUR HOME MOVIES

Make a blockbuster on a budget with AR zombie attacks and nuclear blasts

You've videoed the kids countless times, the odd sunset, trip to the seaside or family event, but you cannot help but feel that every single one of them would be improved enormously with the addition of a dancing skeleton or a rampaging T-Rex. Let's face it, we've all been there, right? Well, this where FxGuru: Movie FX Director comes in to help.

Designed to film scenes in short 15-20 second bursts, you pick the effect you want, start filming and then a surprisingly decent graphical effect is added (relatively) seamlessly while you record – it's a rough form of augmented reality. These clips can then be saved locally or shared on social media, and if you fancied creating your own CGI-packed movie, then it's possible to link scenes together. With a small amount of planning you could group together all the UFO and alien effects together, write a plot and make your own film. You're unlikely to make the next sequel to Independence Day, but hey, we've all got to start somewhere...

“

A surprisingly decent effect is added seamlessly while you record

”



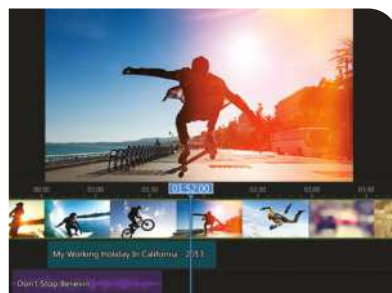
THE CREAM OF THE MOVIE MAKING APPS



Forget about iMovie

There's a fantastic Android alternative to Apple's iMovie, in the form of PowerDirector. Clearly, the developer looked at Apple's software for inspiration, and in this case that's no bad thing at all. The app is free, but we recommend stumping up the in-app payment fee to lose the watermarks and export your video at 1080p.

PowerDirector | Android | Free



The King of Mobile Editing Software

Once you've got some footage together, you'll want be looking for some software to edit it together, and there's no finer for iOS than iMovie – and if you have a Mac, the OSX version is also excellent. There are more options and effects than you'll ever use, and like all-things Apple, it's incredibly user-friendly.

iMovie | iOS/macOS | £3.99/\$4.99



The Bad Robot FX App

You know, Bad Robot? The company that produced *Lost*, *Star Trek* and *Cloverfield*? Yeah, it has a freemium special effects app that you can play around with. It seems like a clone of other FX apps out there, but the fact that it's made by the prestigious production company means that you get many themed packs, and they're pretty good.

Action Movie FX | iOS | Freemium



Green screen effects without having to shoot on one

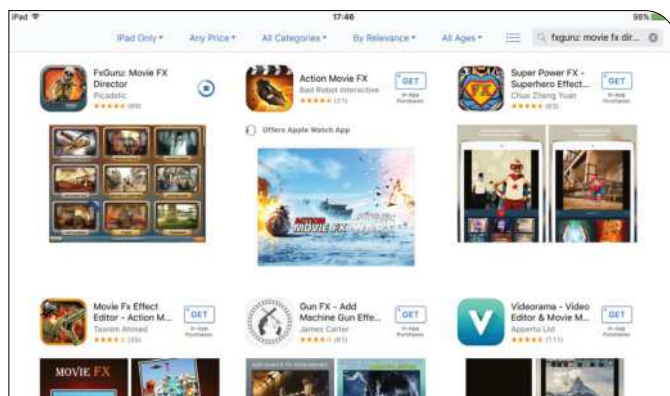
Rather than force you to go and shoot scenes specifically on to a green screen to add effects onto, the Chromavid app lets you to use your own prerecorded footage that can be cut out and superimposed over a dramatic background that's preinstalled on the app. You can choose from a range of colours to replace so you're not stuck with using green



Make Your own Lightsaber Battles!

Speaking of *Star Wars*, we couldn't let a roundup of video-editing apps go by without mentioning one that will make you look like an actual Jedi. Basically Saber Movie FX takes any sword or staff-waving video and converts the weapon to one for a more civilised age – in other words, a Lightsaber.

Saber Movie FX | iOS | £3.99/\$4.99



01 Free (to a point)

First things first, download FxGuru: Movie FX Director for iPhone, iPad or Android. The good news is that it's a free app, but the bad news is that you'll need to pay if you want any of its extras. There are a total of 90 effects in the app, but only 11 are included in the 'free' version – that's more than enough to get started with, though.



02 Checking out the features

The app is incredibly easy to use. Start by checking out the settings on the main screen. If you purchase any of the additional effects packs then you also automatically unlock a couple of additional features – namely higher resolution for the effects and better overall output quality.



03 Ready to start?

The clue for the next step is illustrated in the app by the enormous red button marked 'Start'. Tap on this and you're greeted with the effects menu. As you can see above, there are a few to play around with. Just remember, though: you can choose any effects with the silver border. All the gold ones are in the additional effect packs.



04 Recording your effect

The next screen gives you a couple of pointers to help with recording your clip, as well as the time the effect takes. Get into the location you want to film and press Start again to begin filming. There is usually a wireframe indicator to show where the effect is going to happen, so just wait for the effect to appear.



05 Sharing with the world

When you've finished, the app will process the recording to seamlessly blend your video footage with the special effect. Head back to the main screen and tap on the 'Gallery' option. Here you can see all the clips that you've recorded so far. Tap on any of them to play them again, delete them or share them with the world.



06 Buying extra packs

While on the 'Choose Effect' screen, tap on the 'Menu' icon in the bottom-left-hand corner and there you can break the effects up into the various categories (from Horror to Animals) and also get more information on the packs you can buy – they cost £4 for an additional six effects, or you can buy a whopping 82 of them for £15.

LIFE HACKS

TURN YOUR PHONE INTO A HOLOGRAM PROJECTOR

Create 3D images using any smartphone with this simple hack

This is the sort of thing we absolutely love, where someone has the delicious idea to use technology in a way that's never been considered before. In this case, it's projecting four images on a looped video from your phone onto four angled pieces of clear plastic to create the illusion that the image is floating just above your phone.

Best of all, the equipment you need to get the hologram working on your phone can be made quickly and easily with stuff that you probably already have lying around the house. We've given you a few suggestions for videos you might want to check out, but a simple YouTube search will bring up loads more.

We're indebted to the very wonderful YouTuber Mrwhosetheboss for all his assistance with this workshop and recommend that you also check out his original video (youtu.be/7YWTtCsvgvg) and channel for more tech highlights.

YOU WILL NEED

It's time to get all *Blue Peter* about this. Before you crack on, here's a list of the items you need to gather up. Thankfully, they're all things you're likely to have lying around somewhere and if you don't have any graph paper then feel free to make your own. The lines for this need to be two millimetres apart.

Graph paper

CD case

Tape or superglue

Pen

Scissors

Smartphone

Sharp knife or glass cutter

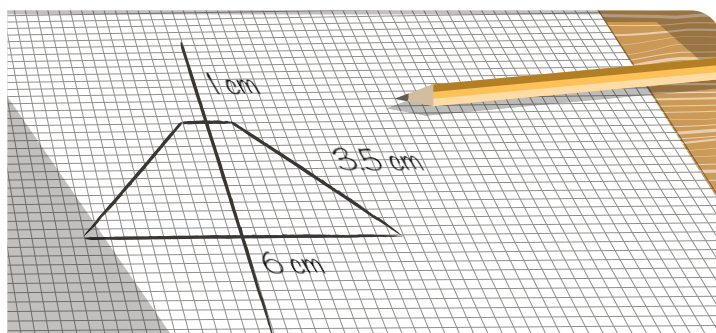


A quick fix

We used tape to stick the sides together, but clear tape would obviously look better – or, if you have a steady hand, you could try gluing the sides

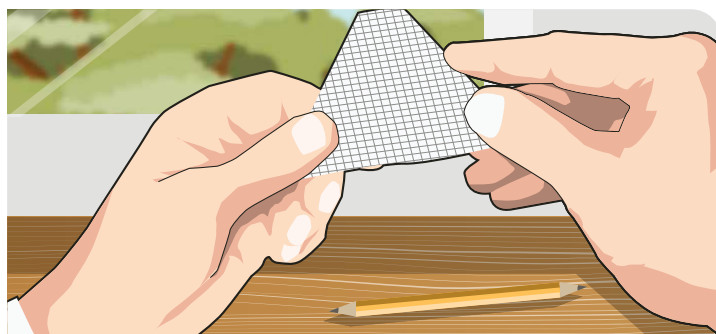
Switch off the lights

Although we have a pretty good image here, this is something that really works best in a completely dark room, so pull the curtains, switch off the lights and try to block out as much light as possible



01 A simple design

To start, you need to mark out a basic trapezium shape on graph paper, as shown here. The top edge needs to be one centimetre across and the bottom one should be six centimetres – with two sloping sides of three and half centimetres each.



02 Cut shapes

Cut the shape out and this should be what you're left with. It's worth noting that the sizes given are just a guide. If you have enough plastic – or want to do the hologram on a tablet – then you can double or even triple the dimensions if you want to.

TIME FOR THE SCIENCE BIT

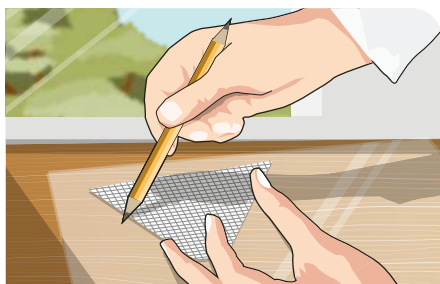
So how does it really work? Are you actually looking at a hologram? Well, not quite. The angle of the clear plastic provides just enough reflection to bounce the light from the image displayed on the phone's screen back onto the plastic and because the plastic is clear, it gives the illusion that the image is floating in midair. As you have created something with four sides, the image can be viewed from practically any angle, which helps to increase the realism of the illusion.

Use your illusion

Here's the viewer we made earlier and although this is just a small one, you're free to make one as large as you wish – so it'll display a better image if you're viewing the hologram on a tablet!

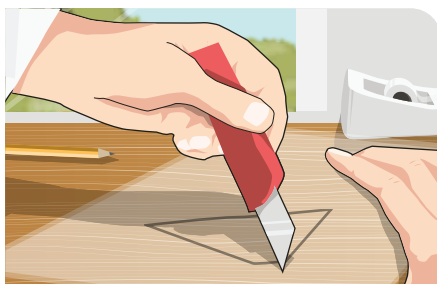
Four squared

To help create the 3D illusion, there are four versions of the image placed at 90-degree angles to each other. The space in the middle is where you place your viewer



03 Mark your spot

Take off the sides of the CD case to make it easier and then carefully trace around the edges of the template on the plastic. The more accurate you are then the more likely you'll cut out a perfect shape and the final holographic effect will be sharper.



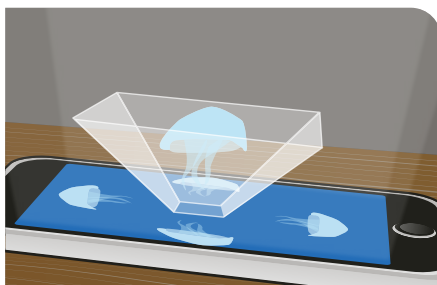
04 Four of a kind

Cut the shape out of the case slowly and carefully, using the sharpest knife you can find. You need to repeat this three more times until you have four identical shapes. Again, the more care you take here, the better the end result will be.



05 Stick it all together

Tape the four shapes together so you get something like this. You can use any type of tape, but clear tape gives you the best effect. You can glue the sides together if you wish, but take care with this as it's very easy for the glue to spread along the plastic.



06 The end result

Run one of the holographic videos, switch off all the lights (you really want it to be as dark as possible) and place your creation on the phone so that it's perfectly in the middle of all four images showing on the screen. And that's it. Enjoy!

3 OF THE BEST HOLOGRAPHIC VIDEOS ONLINE



You're our only hope

It's not possible to round up holographic videos without this gem. Turn down the lights and pretend she's talking to you.

youtube.com/watch?v=udNNnoeqptk



Take flight

The longest video in our list, as it's over five minutes long, it's a super-sharp display of various humming birds moving in and out of the screen.

youtu.be/Uftu0RaIDkw



The variety show

This video is a mixture of jellyfish, sharks and butterflies and although it's short, it's beautifully animated throughout.

youtube.com/watch?v=CIszi2Kv_lk

LIFE HACKS

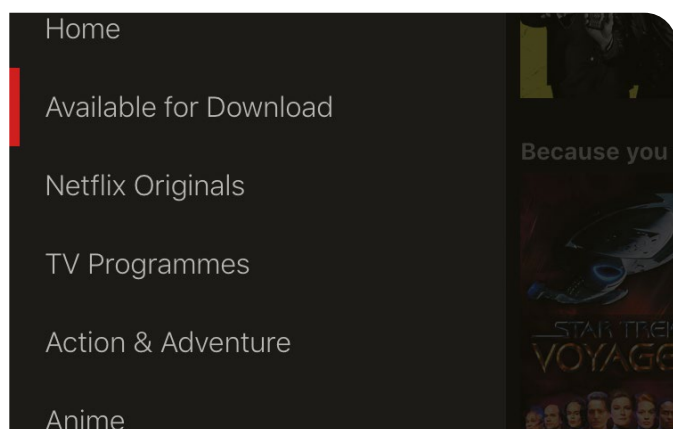
WATCH NETFLIX VIDEOS OFFLINE

Get *Stranger Things* even when you're nowhere near Wi-Fi

Possibly the most requested feature for Netflix has finally arrived. The streaming juggernaut has recently updated its mobile app so you can now download films and TV series to your phone and watch them on your morning commute without burning through your data plan. Users of the rival Amazon Prime Instant Video service will point out they've had this feature for over a year now, but the update is big news for fans of Netflix exclusives like *Stranger Things* and *The Witcher*.

To start downloading from Netflix, make sure your phone or laptop is up to date, as the app requires iOS 8.0/Android 4.4.2 or later. If you're an Android user with expanded storage, keep in mind that the content downloaded will be stored in the same location as the Netflix app, so if you want a series saved onto a SD card, then app must be moved onto it first. It's also worth noting not every show or film can be downloaded, likely due to licensing restrictions.

Who needs friends when you can enjoy a dinner date with Pablo Escobar? With downloadable episodes of *Narcos* on Netflix, you can just do that



01 Find a show

Once you've updated your Netflix mobile app, a new option will have appeared in your side-menu screen called 'Available for Download'. This filters all of Netflix's shows and movies to only display the ones that can be stored on your device. Alternatively, when glancing through all of Netflix's content, a downward-facing arrow symbol will appear next to episodes that are available to download.



02 Download content

Unfortunately for all you binge-watchers out there, the app doesn't have a 'download all' option. So to store any entire series on your device, you will have to download each episode, individually tapping the download symbol. As the episodes download, a bar will appear at the bottom of the screen to display how much of the episode has downloaded and/or how many episodes you have queued to download.



HOW MUCH MEMORY WILL YOU NEED?



Stranger Things
3 seasons - 25 episodes

5.47GB



Orange Is The New Black
7 seasons - 91 episodes

22.89GB



Marco Polo
2 seasons - 20 episodes

5.1GB



Breaking Bad
5 seasons - 62 episodes

16.1GB



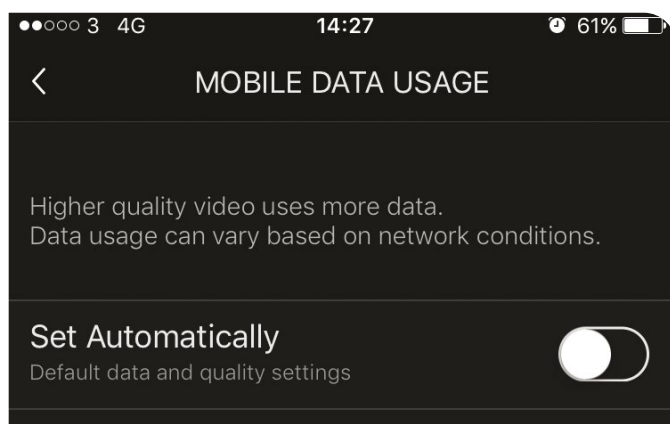
House
8 seasons - 177 episodes

29.79GB



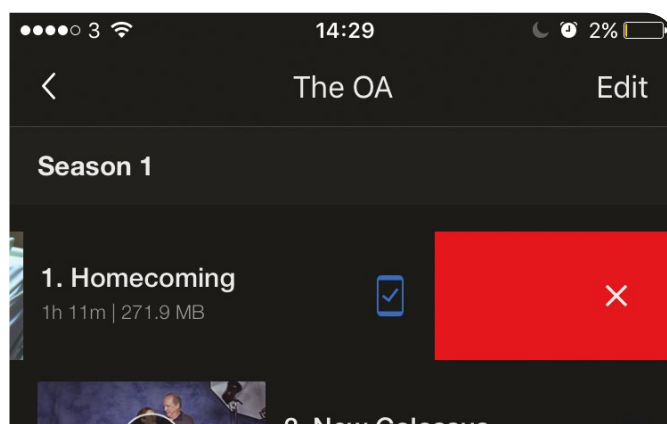
Peep Show
9 seasons - 54 episodes

5.8GB



03 Adjust settings

The app's default is to only download content over Wi-Fi. If you try to download an episode over mobile data, a warning will appear to tell you that it is restricted. Though this saves you the cost of using your data, you can change this in App Settings, which is at the bottom of your side-menu options. You can also set the video quality of your downloads, which can reduce the amount of phone storage that is required.



04 Watch an episode

To watch the shows you have saved to your device, select My Downloads from the menu tab. Here, every episode will be grouped by show. To play an episode, select one as you normally would when streaming. Once you've finished, you can delete downloads individually or by show by swiping left. Alternatively, a 'Find More To Download' button will redirect you back to the show's main app entry so you can view more.

LIFE HACKS

THE SIMPLE WAY TO INSTALL A CEILING SPEAKER

Don't waste time with excess wires

Nothing screams 'smart home' at us like having out-of-sight speakers playing in every room of the house. However, as elegant as they look, fitting a ceiling speaker can be anything but, having to trail wires through the walls, not just for power, but to hook up to your hi-fi as well.

Luckily, companies like Lithe Audio now offer a simple solution: get a ceiling speaker with Bluetooth. You can stream music to it via your phone, tablet, computer or compatible hi-fi with a few taps of your screen. Lithe Audio's straightforward kit enables you to fit a speaker in a matter of minutes. As well as cutting a hole in your ceiling, this involves connect up the

power cable – which runs to a standard power socket – and not a lot else. You can connect it up to a lighting circuit, but we strongly recommend that you get a professional electrician in to do that – see the 'Get The Pros In' boxout for more information on that.

If you're after a professional-sounding system then maybe Bluetooth isn't for you though, as, like MP3, it's a lossy way of listening to music – which means that you'll lose some quality from the original recording. But if you're looking to just have your music playing around the house and can accept a small loss in quality, though, then this might be music to your ears.

Magnetic hold

To avoid too many screws, the cover for the speaker is attached quickly and easily via a series of small magnets that are built into the rim of the speaker

Kevlar cone

The speaker comes with a 6.5-inch (165mm) Kevlar cone for top-quality sound performance across the mid-range frequencies

£200 | \$260

litheaudio.com

Lithe Audio Bluetooth Ceiling Speaker

Have all your music playing through one conveniently-placed ceiling speaker, which connects to any Bluetooth-capable smart device around the home.



Ball-joint tweeter

The tweeter, the type of speaker that's designed specifically to produce the highest range frequency of sound, is right here. It's a ball-joint one, too, so it can be fine-tuned for direction

Speaker output

Overall, the design of this ceiling speaker is pleasantly minimalist – meaning you have the least amount of stress to install it. If you want to hardwire your speaker to another sound system, or attach a second speaker, here's where you connect it

GET THE PROS IN

The laws in the UK regarding building regulations changed in 2005 with the introduction of the 'Part P' electrical safety rule. Although this was relaxed slightly in 2013, it's still recommended that you get a certified electrician to come in and either do the job for you (if you're planning on wiring the speaker to the mains supply), or check over the work you've done. Either way, Lithe Audio's Bluetooth speaker will be cheaper to install than having an electrician fit a traditional wired system.





01 Picking the right spot

The easy part of this process is working out where you want your speaker to go. The first thing you should do is use a stud finder to make sure you're not about to cut into a joist, pipe or wire when you start sawing out the hole for the speaker. When you've found a clear spot, you can then use the supplied template (which measures out a circle with 210mm diameter) to mark the area for the speaker with a pencil.



02 Cutting out the speaker hole

Before cutting large chunks out of your ceiling with metallic power tools, it's probably a good idea to switch off the electronic devices in the house. Now, using either a flat wood bit or a holesaw, drill out a pilot hole (with a battery-powered drill) in the middle of the circle you've just drawn on the ceiling. You should now use a small keyhole saw to cut out the circle – a keyhole saw will ensure a neat and accurate finish.



03 Connecting up the power

We're assuming for the sake of safety that you're going to be using the supplied power lead to connect the speaker to the mains supply, so attach the power lead to the speaker and then run it through to the power socket – making sure that the power lead is not overstretched. The other way to connect the speaker to the mains is through a fused spur – connected to the lighting circuit – but we recommend you get an electrician in if you're thinking of connecting it that way.



04 Fitting the speaker into the ceiling

Insert the speaker into the ceiling as gently as you can. If it catches on anything, bring it back down and shave around the edge it's grazing using the keyhole saw. You want to be careful here that you don't shave off too much, but you also want to take off just enough so that the speaker fits snugly. On the rim of the speaker are four dog-leg fixings, so once the speaker is in place, turn each of these to secure it in place. Now, just attach the grill to the speaker and you're done.



05 Adding a second speaker

You might want to add another passive speaker, which would obviously give you a much better audio experience in the room. You can easily run a second speaker off the main one, which will also supply the power for it too, so there's no need for a second adapter. Drill the hole in the location where you'd like the second speaker to go, and then join it by connecting it to the two speaker output points with standard speaker



06 Pairing up your device

The LED indicator on the rim of the speaker will flash blue/red to show that it is ready to pair up with your device, so open up your device's Bluetooth settings, search for devices and then click on 'Lithe Audio BT'. Enter the pin '1234' and you should then be connected – at this point the LED on the speaker will change to solid blue to show you're connected. It'll also flash blue to let you know when music is playing.

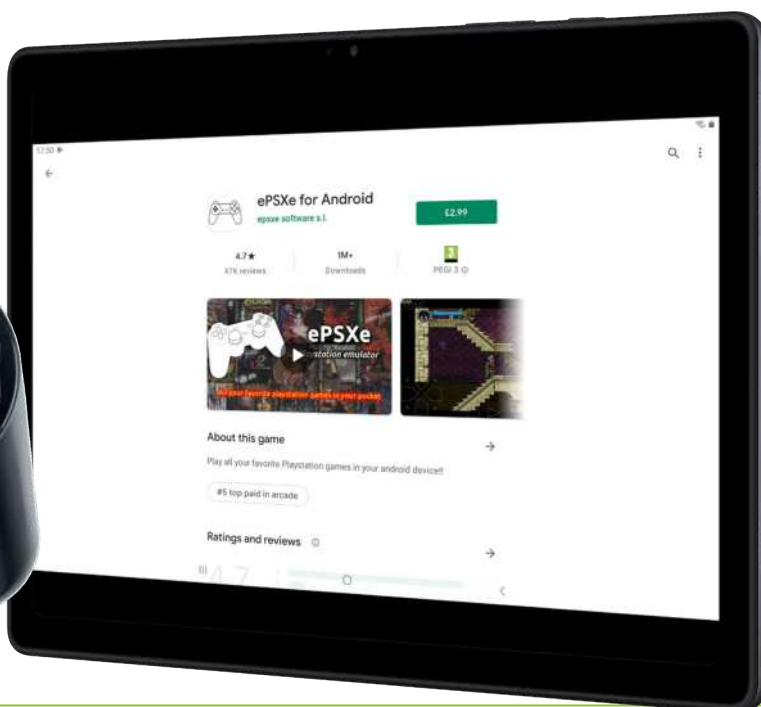
LIFE HACKS

TURN YOUR TABLET INTO A PLAYSTATION

Turn any old Android tablet into a classic games console

Despite being able to install PlayStation apps and some choice games onto Android via the Play Store, there are still many classic PlayStation games confined to history since developers haven't ported them to mobile. Don't fear, however – we've been testing out all the emulators available to download from Google's app store. We quickly came to the conclusion that ePSXe is the best: it plays most games without a hitch and (depending on how powerful your tablet is) can even upgrade the graphics and smooth those jagged pixelated edges

a little bit. Just a heads up, though: if you want to download and install an emulator on your Android tablet, you must legally own the console you're emulating and the actual games themselves – owning the hardware, in a roundabout way, gives you the right to run the BIOS necessary for the emulator to work. The same goes for the games you want to run. If all that's taken care of, though, you'd be surprised at how well even older tablets can run PSONe games (powerful machines can even get a few PS2 games up and running too!).

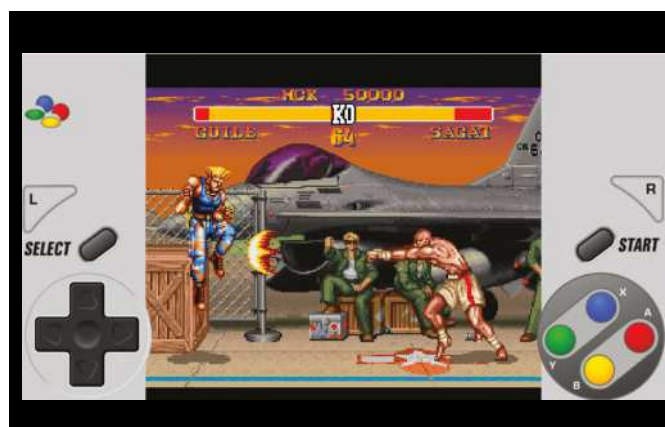


THE BEST EMULATORS ON ANDROID



MAME

As threatening as it sounds, MAME actually stands for the rather more pedestrian 'Multiple Arcade Machine Emulator.' If you've got a hankering for all those classic coin-operated games you used to love back in the day, we're sure one of the 8,000 titles on Android's MAME will suffice.



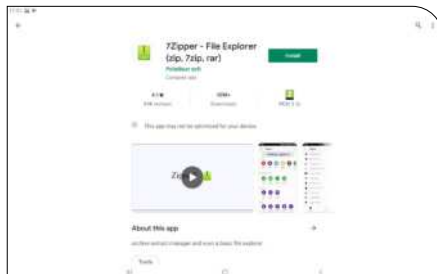
SNES

You'll need an Android device with at least a 1GHz processor to be able to play SNES games on the go, but once you do, the Super SNES app is a fantastic addition to your emulator machine: it's cheap and runs no ads! This is where you'll find all the best Mario games, too.

HOW TO GET SET UP



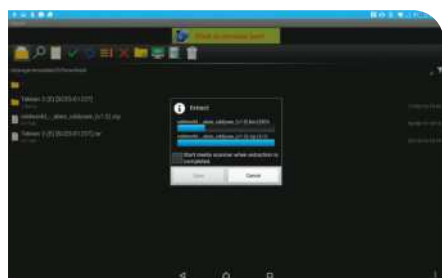
01 Download your emulator
You can pick up the ePSXe emulator for a mere £2.37/\$3.75 on the Play Store. If you're after a free one, there are other options available, but we'd recommend the paid versions: you will find they run so much better, and you absolutely get your money's worth.



02 Make sure you've got a .zip unpacker
Remember WinZip on Windows? Head to the Play Store and get the mobile version – 7zipper is our recommendation. You'll need this to be able to unpack the BIOS and the games you'll transfer to your tablet.



03 Acquire a PlayStation BIOS
You can rip a BIOS from your PlayStation – you'll have to modify it first, but there are plenty of in-depth guides of how to do so online. We recommend learning this, though – because then you'll basically be playing your own console on the go!



04 Unpack the BIOS file in 7Zipper
Boot up 7Zipper and hit 'download' on the main screen. Find the BIOS you want in either your Downloads folder or a custom dump you created yourself (you might want to create a new folder with the game name for indexing's sake). Extract the BIOS and close the app.



05 Run the BIOS in ePSXe
Open the emulator and find the 'run BIOS' option on the landing screen. The app will automatically scan for any BIOS on your local storage or SD card. This may take a while, depending on how much data you've got on your device, but once it finds the BIOS, you can just hit 'run'.



06 Enjoy some mobile PlayStation gaming!
You'll be taken straight to the PlayStation startup screen! If you've mounted a ROM from a game you've ripped yourself, the initiation sequence will start automatically. It's worth noting you can use a PlayStation controller with most Android devices using Bluetooth.



GAMEBOY ADVANCE
The free app *MyBoy! Free* allows you to play all your favourite GBA games (the remakes of *Pokémon Red/Green* are our favourites) and it lets you play multiplayer via Bluetooth, instead of that old proprietary link cable you had to use in the good old days.



SEGA MEGA DRIVE
US readers, we're sorry, but this is what the majority of the world calls the Sega Genesis. The best *Sonic* games are available here, and if you download the free version of *GenPlusDroid*, you'll get a few ads. It supports controllers, and if you throw it to your TV you can get some good multiplayer action running!

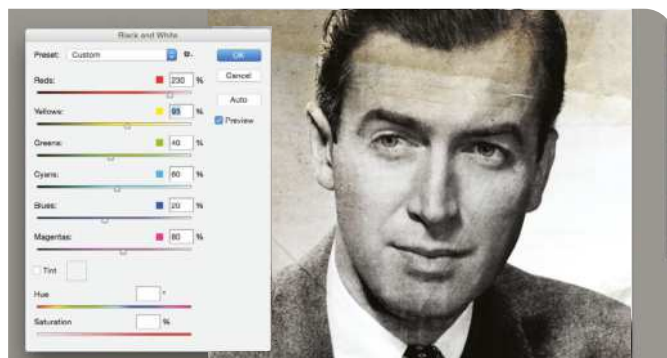
LIFE HACKS

RESTORE FADED FAMILY PHOTOS

Make vintage photos look as good as the day they were taken

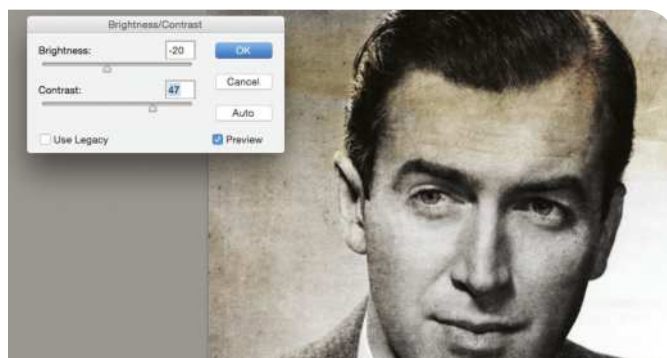
Our family photos offer a physical link to the past. These pictures allow us to put faces to names as well as view older relatives in a new light. But while future generations will be able to find drunken photos of ourselves with a simple search of Facebook, the physical prints we're currently inheriting are prone to have been damaged as they were passed down through the ages. Fortunately, we have the technology to rebuild them. Thanks to the magic of software such as Photoshop, we can restore photos that have naturally faded or have been scratched or torn. Obviously the end result won't have the high resolution of modern digital photos, but they will at least look the same or better than the day they were first taken.

The majority of these vintage photo fixes can be done with the Patch tool in Photoshop, but for the best results we suggest using a combination of tools as shown in this tutorial. Some of these tips can be done quickly and with ease whilst other require a bit more attention to detail and patience but with some trial and error you can get those photos looking good.



01 Colour correcting

A photo that has a tint can be corrected easily. If the image is monochromatic, go to 'Image' then 'Adjustments' to 'Black & White'; for colour images go to 'Image' then 'Adjustments' to 'Colour Balance' and from there move the sliders away from the offending colour to counter it.



02 Adjust contrast

An image's contrast is very simple to adjust, go to Image then over to Brightness/Contrast and move the slider left and right to the level that you want. There is also an Auto-Adjustment function that can do this for you.



HOW TO PRESERVE YOUR OLD PHOTOS

01 Maintain their temperature

Avoid attics or anywhere else that the temperature will change constantly. Keep all photos in a cool, dry place as this slows down the rate of decay.

02 Frame them properly

If you are going to frame old photos, make sure it has UV conservation glass and keep them away from direct sunlight.

03 Pack them correctly

Use a container made from board or an envelope that's acid free or isn't buffered. It should also be a similar size so the photos can't move around whilst inside.

04 Use safe photo albums

Avoid over-stuffing your photo albums, and you should use paper or envelopes that are acid-free or with plastic films, such as polyester or polypropylene.



03 Adjust the exposure

Altering the exposure of the image will affect the lightness or darkness of image, affecting the shadows, highlights, mid-tones etc.. Go to 'Picture' to 'Shadows/Highlights' and adjust the levels. If one area is particularly bright create a new layer and paint black with a soft-edged brush on a low opacity.



05 Get rid of dust and scratches

Create a new layer and go to 'Filter' then 'Noise' and to 'Dust & Scratches' then make adjustments where necessary. This filter can blur objects so to correct this, use the Quick Selection tool around the subject and then a layer mask to reveal the original subject underneath. Any other spots can be corrected with the spot healing brush or Patch tool.



04 Remove Creases or folds

Select the Patch tool and use it along the crease a small section at a time. For any areas that are have a pattern or when it changes from one piece of clothing to another use the Clone Stamp tool. A crease that is on the background or low-detailed area can easily be mended using the Spot Healing Brush tool.



06 Repair any damage

Duplicate the original layer and use the Polygonal Marquee tool to select around a rip. Go to 'Edit' to 'Fill' then over to 'Contents' and select 'Content Aware'. If this doesn't work correctly adjust the selection. The Clone Stamp tool copies pixels from one area and applies them to another, this works well for backgrounds.

LIFE HACKS

MAKE ANY PHOTO 3D

This quick editing trick can give your pictures a retro effect



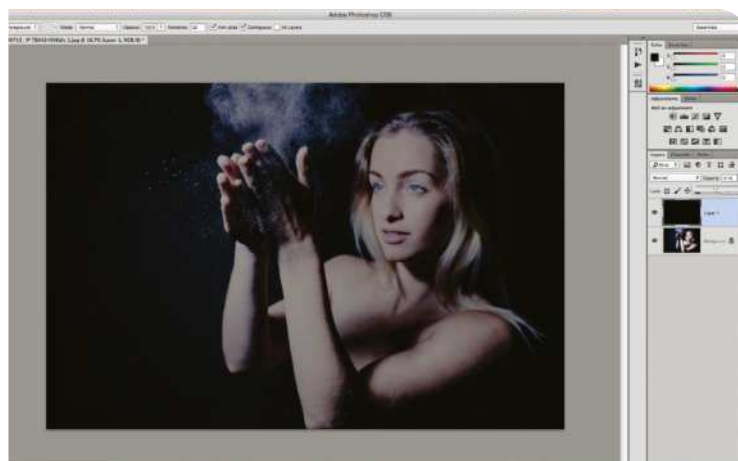
“ Make sure the photo has a clear object in the foreground and a clear background ”

In a world where Hollywood blockbusters are increasingly shot on green screen so that CGI backdrops and characters can be added in later, 3D effects mean something quite different to they used to. While this kind of techno-wizardry is beyond our skills, it's never been easier to make your photos pop with the kind of retro 3D that made The Creature From The Black Lagoon jump out of the screen to scare Fifties audiences.

Technically known as 'anaglyphic images,' these are easy to create in Photoshop. But there are a couple

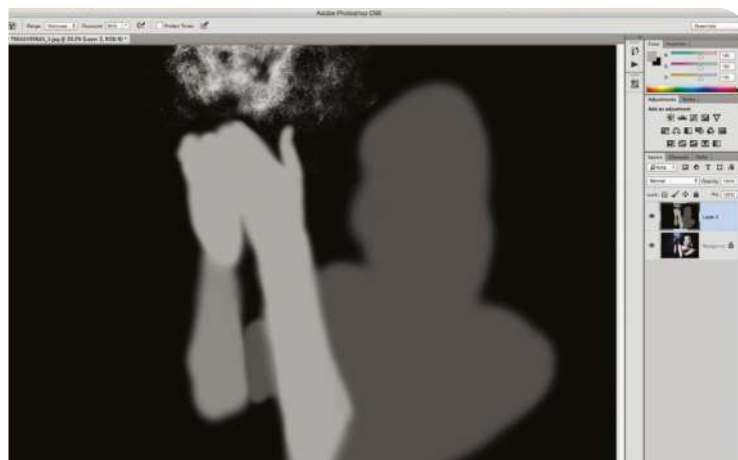
of things to be aware. For your first time make sure the photo has a clear object in the foreground and a clear background. Also, the object that is the focus shouldn't be red or blue – play around with the image's saturation levels if it is. Finally, you will need a pair of red-and-cyan anaglyphic glasses to be able to see the 3D effect. Fortunately, you can pick up a pair cheap on eBay or even Amazon.

There are several ways to create an anaglyphic photo, but this method gives you the most control over the final image and a better 3D effect.



01 Set up your image for tracing

Open up your image in Photoshop and create a new layer in the Layer tab. Alter the saturation levels at this point if you think the image needs it. Change the opacity of this new layer so you can slightly see the original image underneath, around 50 per cent should be enough. On this layer we will use the Paintbrush tool to paint numerous shades of grey.

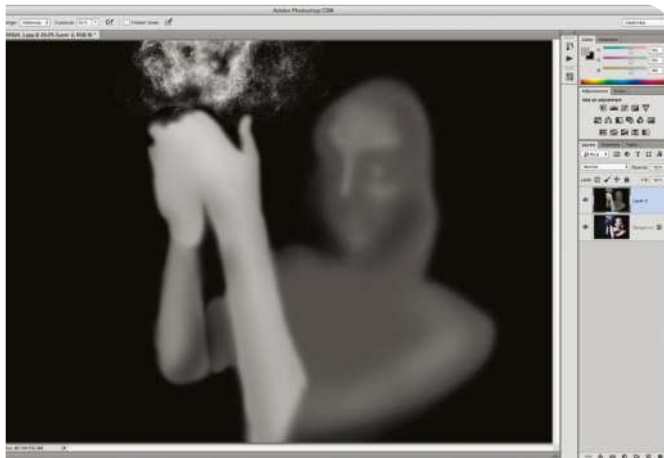


02 Work from back to front

We are using many shades of grey to differentiate the different sections of the images – this is done to give us a field of depth. We use black for the parts that are furthest away, and white for the closest. Find the part of the image that's furthest away and start to fill that area in with black using Photoshop's Paintbrush tool set to a simple solid brush.

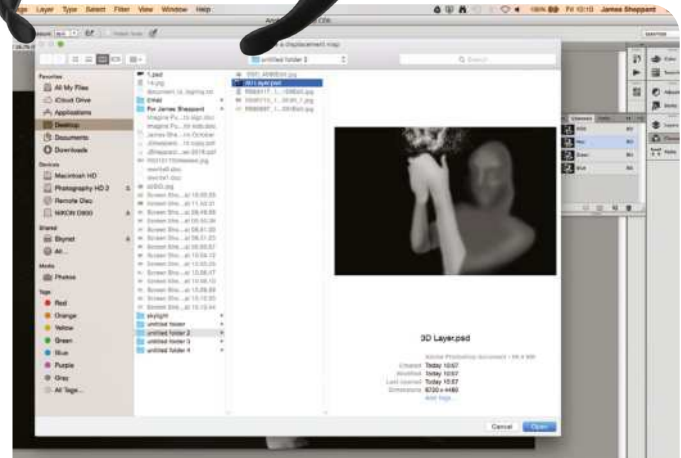
HOW DO WE SEE 3D?

For anaglyphic 3D, the image has two filtered layers, red and cyan, both of which are slightly offset from each other. When looking through anaglyph glasses, each eye is only seeing one colour as the other is being blocked, the brain puts these two images together and, because of the two 'images' are offset, the brain is tricked into creating a sense of depth in the image. The kind of 3D you get in your cinema today is passive 3D, the glasses filter light waves which are projected at certain angles. Because it is light that is being filtered, not colours this doesn't distort the final image in any way.



03 50 shades of grey

Switch to a darker shade of grey and fill in the next section that is closer, for each proceeding section switch to a lighter shade of grey until you get to the subject of the image. The more sections of grey you use, the greater depth in the final image. Stop every now and then to check that there are no gaps in the layers that you are making.



05 The devil is in the details

Once you have added your details, delete the layer with the original image so you are left with just the grey layer that you have created. Save this image as a .psd file and name it something obvious that you can easily find, we named ours '3D Layer'. Now, load up the original image again in a separate Photoshop tab.



04 Add any additional detail

Whatever is going to be the closest object in the frame should be the closest to white. You can now add detail to the subject by adding slight shades of grey onto it. Use the Burn tool to gently add dark patches, and you can add as much detail as you wish. If you need to make parts slightly lighter use the Dodge tool.



06 Displace the colour channels

Bring up the Channels tab and select only the red one. Go to Filter, Distort and then Displace. Set the horizontal displacement value to 25. Now deselect the red layer and choose the blue one. Again, go to Displace, but this time set the horizontal displacement value to -25. In the Channels tab select all and you should see your anaglyphic image.

LIFE HACKS

TURN YOUR TABLET INTO A PICTURE FRAME

Display all your digital photos with this quick trick

Many of us have an old tablet tucked in a draw gathering dust. Chances are you abandoned it because your new phone has a screen big enough for watching videos on the go or because your new supercharged iPad Pro has made your old tiny tablet obsolete. But rather than let your mothballed tablet go to e-waste, why not turn it into a digital photo frame?

Just like your abandoned iPad, so many of the photos we snap with our phones never see the light of day. Digital photo frames tried to solve this problem when digital cameras first launched, but have since faded out of fashion like a bad Instagram filter. However, whereas users of old school digital frames had to manually load pictures onto the device via SD cards, you're old tablets are likely still connected to all your Cloud accounts. This means that once you hang them up, they can display a slideshow of your pictures, which will regularly update over your Wi-Fi. If you're not much of a photographer, there are also lots of apps, such as Dayframe, which will provide a steady stream of pro shots for you to enjoy. Read on to find out how to get started.

“

We are taking more photos on our smartphones than ever before

”

£520 | \$520
netgear.com

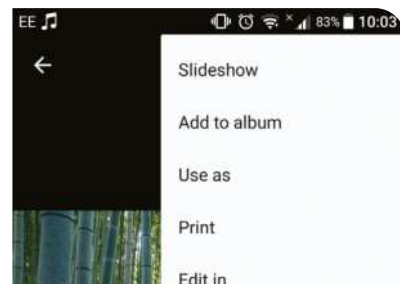
Meural

If you're too lazy to make your own, the Meural is a 21.5-inch, full-HD screen that will display your pictures over Wi-Fi. To justify its hefty price tag, it's set in a beautiful hardwood



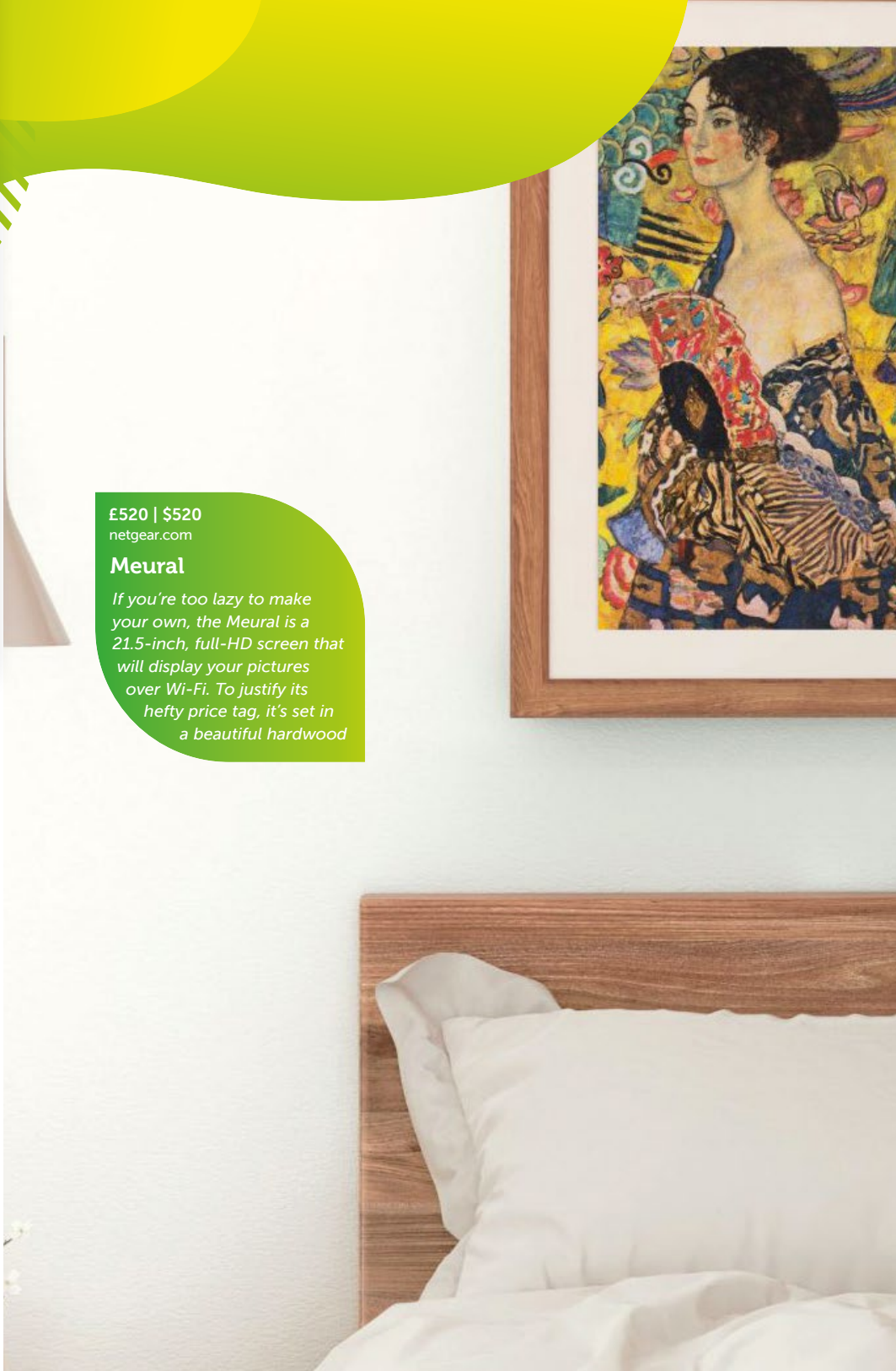
01 Make a frame

Measure your tablet or just look up the dimensions online to get the dimensions for a frame. If you're using wood, glue is better for holding the frame together than nails.



02 Set up a Slideshow

To display a constant stream of images, the Photos app for iPad has a slideshow function. On Android, this option can be found in an individual photo's settings.





BEST PICTURE FRAME APPS

Mayka lenova: Featured Works



Meural

Select your own folder of photos or for a onthly fee, get a stream of images from a library of over 30,000 works of art.

Android & iOS | Free



Fotoo

This app offer a lot of customisation. Set image duration, display photo information such as location and turn the time on or off.

Android | Free



iDigiFrame

This free download allows you to choose rotation time, transitions and if the images scale to fit and what albums. Very easy to use.

iOS | Free



03 Stay powered

Make sure your tablet's power cable can reach a socket before affixing a bracket to a wall. If it can't, consider running an extension cable through the walls for a tidier finish.



04 Put it on a stand

Rather than hanging a frame, you can also buy a electronic display stand to put your tablet on. Set up the app to display images, place the tablet on the stand, and you're done!

LIFE HACKS

4 MOST COMMON WI-FI PROBLEMS AND HOW TO FIX THEM

Banish the Wi-Fi blues

When your Wi-Fi drops, it can be just as frustrating as a water or power cut. But you don't have to accept the wireless internet woes you've been given. From router settings to extra kit, help is at hand to ensure there's always a smooth and stable link to the web for you to enjoy. Even with limits to your router's range and other interfering gadgets to contend with, we'll show you how to optimise your setup for fewer outages.

YOUR INTERNET IS TOO SLOW

Wi-Fi speed doesn't exist in a vacuum: other factors can wreak havoc

- 01 Change your router's location**
Routers broadcast Wi-Fi in every direction, so don't stick yours in the corner of the house — cables can connect it to the phone socket, if necessary.
- 02 Update your hardware drivers**
The latest firmware and driver updates ensure the fastest speeds, so check the manufacturer sites for your router and your wireless adapters for updates.
- 03 Adjust the router antennae**
Some routers have external antennae to direct Wi-Fi, others let you install additional ones. Check the router documentation for details.
- 04 Change the wireless channel**
Most routers support multiple channels and switching between them can solve problems. Head to the router's Settings page for information on this.
- 05 Preserve bandwidth**
You only have a finite amount of Wi-Fi bandwidth. Check app and device settings to minimise unnecessary access and close down browser tabs.

YOUR ROUTER CAN BE HACKED

Don't let anyone else steal your hard-earned Wi-Fi — keep your router locked down and protected against unwelcome visitors

There are many different models of router out there, but you can usually access the settings for your device by entering a special IP code into an open browser tab (this code should be in the manual or in a letter from your ISP). All the key settings we've mentioned here should be on the subsequent screens — consult the supplied instructions or find an online guide that's specific to your router for full details.

01

Change your router's admin settings

Routers all get the same admin login code from the factory, so change yours to something else. Log in to your router through a browser tab and look for a security or settings page (the instruction manual should have details).

02

Hide your router's SSID

Your router's on-board settings should also let you hide its Service Set Identifier — again check the manual for where this option is located. You'll have to type it in manually when you connect new devices, but it won't appear to anyone else.

03

Pick a strong Wi-Fi password

A strong Wi-Fi password is the same as any other strong password: make it lengthy and unguessable, with a mix of letters plus some numbers. As before, log in to your router's settings through a browser tab using the IP code supplied with it.

04

Change your password regularly

While we're on the topic of Wi-Fi passwords, change yours regularly, so anyone who has somehow gotten access to your network will instantly get locked out again. The option should be fairly prominently displayed in your router's settings.

05

Keep monitoring your connection

If you are of a paranoid nature, the good news is that your router (and a wealth of apps) will be able to tell you if any unrecognised devices are on your network. Set these up and then make sure you check the findings on a regular basis.

EXPERIENCING INTERFERENCE

Gadgets and Wi-Fi don't always play nice

Cordless phones, microwaves, baby monitors and various other bits of gadgetry can all affect a Wi-Fi signal, so watch out for devices like these close to your router. For a complete diagnosis of your network, a variety of apps are available, most of which are on Android (Apple doesn't like Wi-Fi scanners in its App Store).



NETGEAR Wi-Fi Analytics
Price / OS
Free / Android



Wifi Analyzer (Farproc)
Price / OS
Free / Android



Wi-Fi Analyzer (Martin Hloušek)
Price / OS
£1.69/\$2.75 / Android



WI-FI TO COVER THE WHOLE HOUSE

Get online wherever you are

Wi-Fi extender

A Wi-Fi extender like the EX7500 latches on to your existing network and clones it, effectively acting like a stepping stone for your Wi-Fi between two points.

£120 | \$119.99
netgear.com

NETGEAR EX7500

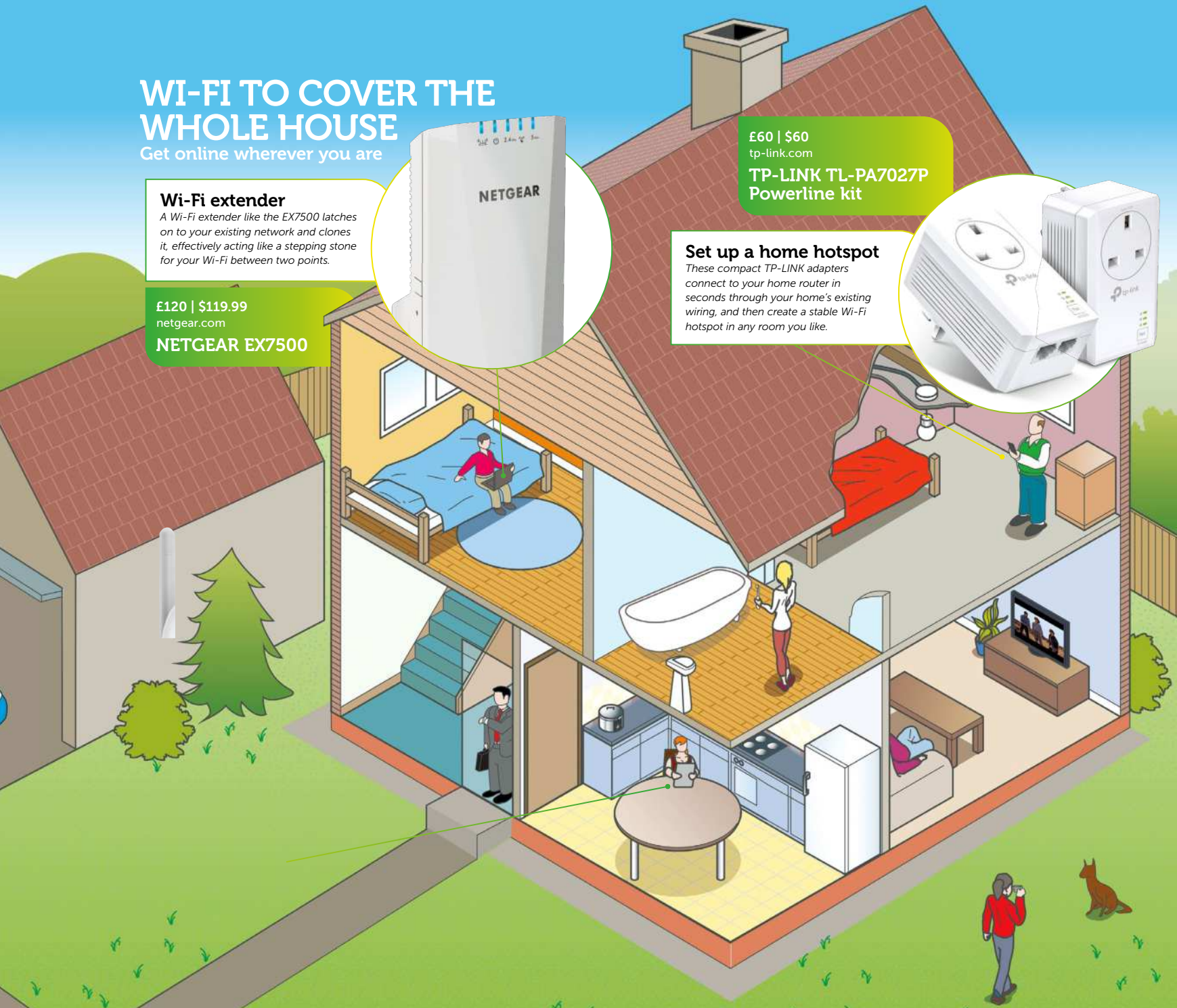


£60 | \$60
tp-link.com

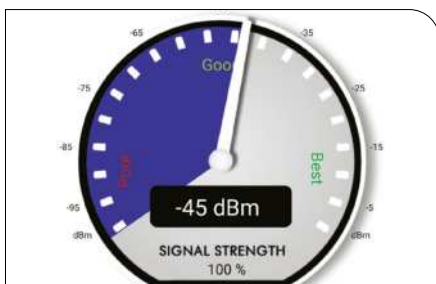
TP-LINK TL-PA7027P Powerline kit

Set up a home hotspot

These compact TP-LINK adapters connect to your home router in seconds through your home's existing wiring, and then create a stable Wi-Fi hotspot in any room you like.



Find and avoid interference



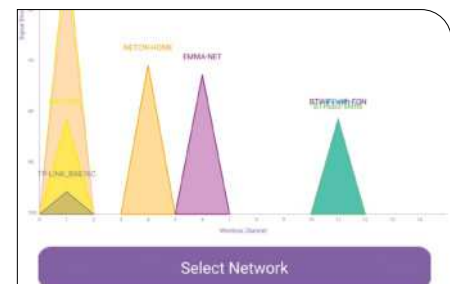
01 Check signal strength

NETGEAR's app lets you check signal strength from the front screen – try wandering around your home to see how much interference you get in each room.

Refresh		
Channel	Number of Networks	Clarity
1	4	AVERAGE
4	1	BEST
6	1	BEST
11	3	GOOD

02 Change the channel

Switch to the channel interference screen (fourth icon from the left) to see which channels are most crowded: head to your router's settings page to switch.



03 Check nearby networks

The channel graph page (second icon from the right) offers another way for you to check where there's most congestion and interference from surrounding networks.

LIFE HACKS

BOOST YOUR BROADBAND SPEED

An iffy name but brilliant kit, Boosty is perfect for turbocharging your Wi-Fi

Despite the fact that broadband has now been around for years, it's still sadly the case that many people are struggling with a poor connection. As the demands of the internet increase, and more and more people use it to stream TV, films, music and online gaming, there's a number of users that are being left behind simply because the area they live in doesn't have a strong enough internet signal.

One solution is to have your internet upgraded with fibre optic broadband, which will improve things dramatically, but if you've got a smartphone in the house that's not using anywhere near the amount of data given to it on your

contract, or you can't get fibre optic broadband in your area yet, then there's now a new solution that might be able to help you.

Boosty is a small device that plugs into your router and is able to boost your home's internet signal by up to three times by pairing your home connection with that of your smartphone. It spots when your connection is lagging a bit and helps it out by stealing a bit of your phone's data allowance. It's a smart idea, but how does it work? And will it end up costing you a fortune? Luckily for you, we have the answers to these and many more questions in the following workshop.



Sucks power

The power for the Boosty comes from the device (PC, laptop or tablet) that you're connecting it to for the Wi-Fi boost. Attach the USB cable here, and then plug the other end into the main device

Reset button

Should anything go wrong, then you don't need to panic. Just press this button to reset the Boosty box and try again

£70 | \$100

boosty.com

Boosty

Crave faster broadband? Help is at hand with Boosty, the simple-to-use device that uses the data from your smartphone to boost the strength of your home broadband signal.

Ethernet connector

Using the Ethernet cable that comes with your router, connect up the Boosty by inserting the cable into the device and then into the back of your router

ALTERNATIVE TECH TO GET YOU ONLINE



Brck

The Brck is basically a portable Wi-Fi device that has been designed to be used in the most remote locations, where it's practically impossible to get a phone signal.

£175 | \$250 | brck.com



TP-Link M5350

If you need to set up a Wi-Fi hotspot, then the TP-Link is the device for you. All you have to do is insert a SIM card into the Link and it can then be shared with up to nine users simultaneously.

£40 | \$90 | tp-link.dk



BT 600 USB Wireless Adapter

Stick it in a computer without a Wi-Fi card and it'll connect it up to your network. It's also dual band, too, so you can use it with other devices.

£20 | \$30 | shop.bt.com



Linksys Range Extender

If you're trying to use a single router in a large area, then the RE6500 from Linksys will ensure that you don't get any dead spots, as it's one of the best Wi-Fi range extenders on the market.

£80 | \$80 | linksys.com

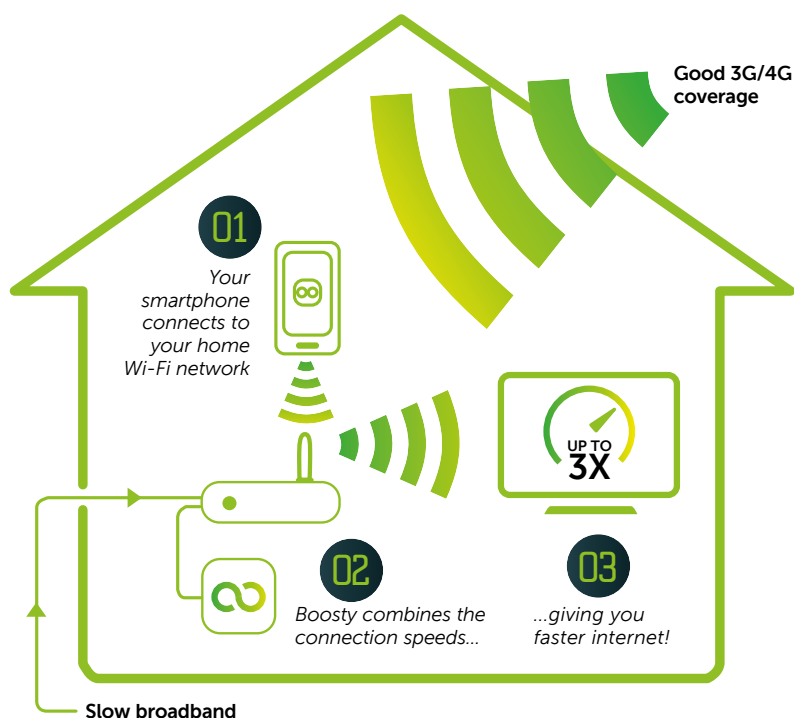
HOW IT WORKS

As we've already mentioned, Boosty works by combining the signal from your Broadband connection with that of your smartphone. But how exactly does it do it? And does that mean you'll get clobbered for additional data fees when you get your next phone bill?

For Boosty to work, you'll need a ADSL connection with a speed of up to 12 megabits per second (Mbps) and an Android or an iPhone with a decent reception (at least two bars) and 3G or 4G, too. Connect everything up and then, when you browse the Internet, you should notice a marked improvement on your browsing speeds.

Boosty works by 'topping up' your broadband connection only at the times when it's really needed – therefore saving your data allowance. For example, if you wanted to watch a 3Mbps video stream but you've only got a 2Mbps connection, Boosty will only add the extra 1Mbps that's needed. If you have a powerful enough mobile signal, then Boosty can increase the speed of your home Broadband by up to three times.

You do have to be careful if you have a limit on your phone's data, though, but the Boosty Link app is perfect for this, as it allows you to control exactly how much data Boosty can use each month.

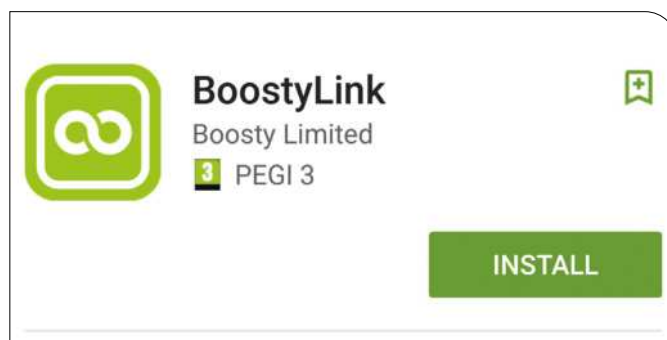


SET UP BOOSTY



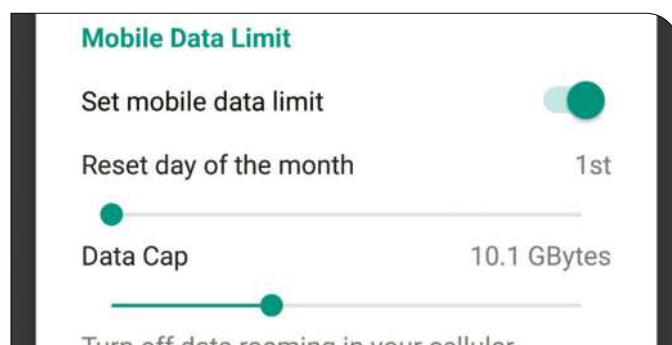
01 What's in the box?

Setting up the Boosty really couldn't be easier. In the box you get the Boosty itself (which is surprisingly small), a short Ethernet cable and a USB power supply. Make sure to carefully read through the instruction leaflet that comes with it – it starts by giving you an overview of the device and exactly what it can do.



02 Finding the app

Now you need to find the Boosty companion app, Boosty Link, on your smartphone. This is the app that will allow your phone's 3G or 4G connection to be combined with that of your home broadband's connection. The app is available for both Android and iOS, so go to the relevant store and download it.



03 Setting a cap

If you're worried that you might use too much of your data then there's an easy way to get around that, as the first screen you come to when you open the Boosty Link app allows you to set both the day of the month that you reset the data and also a cap the data you use. Obviously you don't need to worry about this if you've got unlimited data.



04 Time for a Boost!

With the app up and running, now is the time to connect the Boosty to your device and then use the Ethernet cable to attach it to your router. Go back to the app on your phone and test the connection to see if it's working. When everything's running okay (which it should do without any trouble) you're good to go.

LIFE HACKS

6 WAYS TO LIVE ON THE CLOUD

Some simple solutions for an online life

To most people, if you mention cloud-based storage then you'll be met with a blank stare and, occasionally, a nervous twitch. The myths surrounding anything to do with the mysterious cloud are that a) it's complicated and b) it's not safe. Thankfully, neither of those statements are actually true and once you experiment with living a cloud-based life, then you'll never turn back.

Simply put, a number of companies (including ones you may have heard of such as Google, Amazon and Apple) have systems in place that enable you to upload files to a digital storage facility. Why? Well it's a good way to back up your files for one thing and it means that you can access them on any device wherever you are – from music and videos to work files and documents.

So without further ado, here are six ways in which we guarantee the cloud can make life simpler for you, from online photo albums and music, to storing notes and to-do lists.



01 BACK UP YOUR PHOTOS



One of the main uses for the cloud is to store photos from your phone or tablet. Luckily, it's incredibly simple to activate and means you can view your photo library from any other device or computer. Once you're backed up, you're free to delete photos on your device, knowing that they're permanently stored in the cloud – saving you valuable device memory.

01 Switch on backup

On Android, you need to make sure your Backup settings are switched on, so open the Photos app and go to Settings>Backup and sync. If they're not on, tap the button at the top of the screen.

02 A mobile photo library

Then simply sign in to your Google account on any other device – such as a computer or a tablet – and go to Photos in order to view your library. You can now edit photos, download or delete them, or create albums to share.

03 The joy of iCloud

Apple's own cloud-based storage system is, rather unimaginatively, called iCloud and it works in a very similar way. Make sure that your Apple device's iCloud feature is turned on in Settings and then log onto your computer to see your Apple device's files.

02 SYNC YOUR MUSIC



If you have a large music library and a relatively small amount of memory on your device, then it's probably not a bad idea to store your entire library in the cloud. That way you can sync across only the music you like – safe in the knowledge that it's all stored if you ever want access to it. As always, there are some very simple ways to make this happen.

01 Back up your library

The easiest (and best) way to save your music library to the cloud is via YouTube Music. To start, just go to music.youtube.com and log in using your Google account or set up a new one.

02 Automatic syncing

Click on your profile icon followed by Upload music. YouTube's uploader will ask you where you'd like to import your music from or you can drag and drop your music files onto the screen. The music can then be found on any device using the YouTube Music app.

03 iTunes Match

There's an easy way to do it on an Apple device too, but iTunes Match will charge you £21.99/\$24.99 for the privilege – although you do get it free as part of Apple Music membership. Alternatively, Apple users can also take advantage of YouTube Music.

03 TAKE A NOTE

As smartphones get smarter, our uses for them have rapidly expanded. Now the technology has made it easy to make notes, jot down thoughts and ideas at any point, and the joy of a service like Evernote is that it stores all of these scribbles on the cloud. You can write up some ideas on the move and then continue with them on your computer, safe in the knowledge that everything is stored online and accessible to you at any time from any device. Here's how it works.

01 Sign up to the service

Head to Evernote (evernote.com) and log in with an email and password. It's a free service, but you can pay from £4.99 a month for extra features.

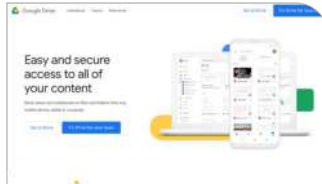
02 Automatic syncing

Creating a note is very easy. You simply write as you would on a normal word processor, then you can also drag and drop any images, videos or any other file into the note too.

03 Viewing notes on your device

Download the corresponding app on your device and the notes you've saved will appear here. Any files can also be opened, as long as you have the app installed to do so.

04 SET UP GOOGLE DRIVE

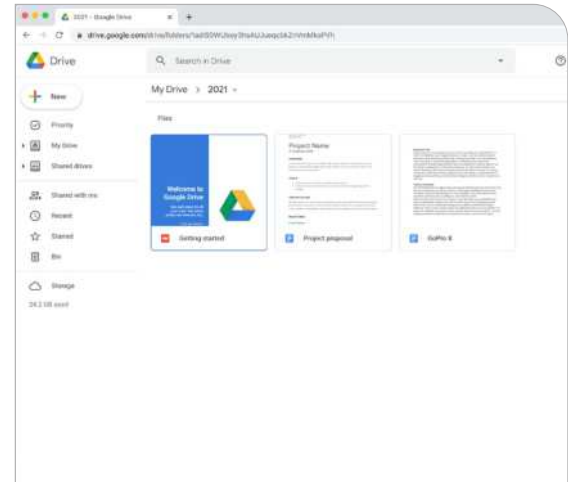


An invaluable tool for anyone who works remotely or who wants to access files at any time and be able to share them among friends and co-workers, Google Drive enables you to store word processor docs, spreadsheets, PDFs and even Adobe files (Photoshop images or InDesign pages). You get a whopping 15GB of storage for free, plus the ability to buy more.

01 Start organising your life All you need to do to sign up for Google Drive is head to google.com on your device or a computer and sign in with your Gmail account. Then just set up a new folder and you're ready to start uploading files.

02 Get started In the great tradition of Blue Peter, here are some that we uploaded earlier. You can view PDF files, edit Word files and Excel spreadsheets or just store practically anything else you can think of to be downloaded later.

03 View notes on your device And, naturally, the same is true on the portable version of Google Drive. Any amends you make on the move are automatically updated to the cloud.



05 MICROSOFT MANAGEMENT

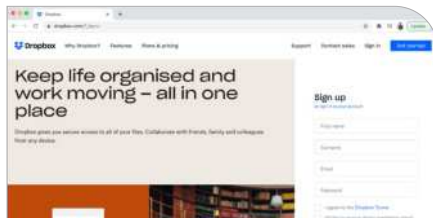
If you're anything like us, you probably have an endless sea of scraps of paper with important notes scribbled on them. Notes get lost, things get forgotten and life descends into chaos. All that stress can be avoided though with one simple service: Microsoft To Do. As the name suggests, is an online storage service for all of your to-do lists. You can create, share and alter them whenever you want, and on any of your devices.

01 Start organising your life That's a bold statement to be sure, but trust us, after a few weeks with Microsoft's To Do you'll be amazed how you ever managed without it. Start by signing up at todo.microsoft.com.

02 Get started Make a new list, name it and start writing up jobs you need to remember. You can easily create multiple lists and drag and drop jobs between them.

03 View notes on your device The app on your device will regularly sync with your online account, so any changes that you make on the web version are quickly updated on your device and vice versa.

06 DROP IT LIKE IT'S HOT

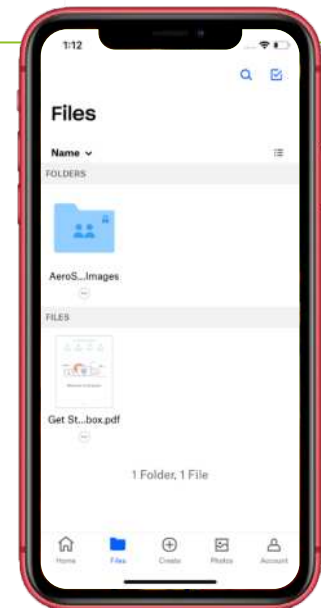


Still the best way to store files and folders probably has to be Dropbox. You can either upload things directly to the service's online browser or, conveniently, you can also download a program to your computer to just drag and drop items into it like any other folder on your PC. You get 2GB storage to begin with, but can earn more space by referring friends.

01 Share and share alike If you have a stack of files on your computer or your device that you want to be able to share quickly and easily then Dropbox may well be the best place for you. Head to dropbox.com and then sign up for an account.

02 The Dropbox folder One of the good things about Dropbox is its ability to enable you to have a standard folder on your desktop to drag and drop your files into – just like this one here. Another great thing is that it's absolutely free!

03 Out and about The mobile app mirrors the online service perfectly, so you can upload files, view and download anything that's on there. If someone you know needs something in a hurry, then this is the perfect solution from cloud software.



LIFE HACKS

NEVER SEE A POP-UP AD AGAIN

Install an ad blocker to get rid of annoying adverts and auto-play videos

We should start by stating for the record that we've not nothing against adverts appearing on websites. After all, why shouldn't the people that supply the content for you get something back in return, but we are becoming increasingly less tolerant of the sites where two or three autoplay videos load up when you arrive on it, which are then joined by several animated banners.

Thankfully, help is at hand through the numerous ad-blocking programs that are available for any browser or operating

system. These work by being small pieces of code, called extensions, that are added to the main browser software to enhance its capabilities. They're often very small pieces of code, so they can be added in seconds and really add useful functionality to your software.

Best of all, you can tailor them to your needs, which means you can allow adverts on less-intrusive websites and only block the adverts from the ones that are slowing your browsing down. Here's how you do it in just six easy steps...

“ They can be added in seconds and can add useful functionality to your software ”



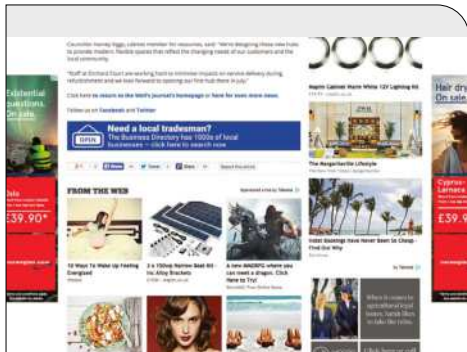
SELECTIVE ADVERTISING

The chances are that there are probably only a handful of sites that you really want to cut down the advertising on, and so are happy to browse others where the adverts are less intrusive. What you can do for these is something called 'whitelisting', which is where you build up a list of trusted websites where

advertising is allowed and, therefore, not blocked through your ad blocker.

Using AdBlock as an example, if you go through to the options for it then, under 'Customize', you can either just add URLs to the sites you want blocked, or head through to a tutorial to help you write scripts for whitelist filters.





01 Not so user-friendly
Websites like this one pictured above are becoming all too common. You click on the link and, depending on the speed of your computer, have to then wait until all the autoplay adverts, animated banners and additional adverts load. Thankfully, though, help is on the way thanks to your friendly neighbourhood **Gadget** team.



02 Getting an extension
Most browsers now have extensions, which are small pieces of software that can be downloaded and added to the browser. For this example, we're using Chrome so a quick search reveals Adblock to be the most popular one – different browsers and operating systems prefer different software: here's a list (right).



03 Very easy to install
Because you're only adding the extension to Chrome rather than downloading a whole program, it's very easy to install – you don't even have to quit and restart the browser. Just click on the 'Add To Chrome' button in the top right-hand corner of the window, and then, on the next window that pops up, just click on 'Add extension'.



04 Time to pay up
You then get the honour window, which is Adblock's developers way of asking you to contribute to the costs of running the software. If you use it and find it useful then we obviously recommend that you bung a few dollars their way, as apparently the extension has five full-time developers working on it.



05 Tweaking the options
Now the extension has been installed. If you look up to the top-right-hand corner of your window then you'll see the icon for Adblock with a number next to it – which is the amount of adverts the extension has blocked on that particular page. Click on the icon to bring up options – including the choice to ignore ads on the page.



06 Nice and quick
Go back to the original page with the extension activated and you'll see a difference in the amount of ads displayed, speeding up the time the page takes to load and also the amount of time navigation takes. If you're on a site that's not that intrusive, though, then you might want to stop Adblock to help support the site's owners.

REMOVE ADS FROM EVERY SCREEN



Adblock

If you are running a Chrome or Safari browser, then the only choice you really need to consider is the brilliant Adblock. It's relatively easy to install and it will speed up your Internet experience considerably, making browsing the web fun and easy once more.
Available for: Chrome, Safari
Free | getadblock.com



1Blocker

Mobile devices are just as prone to the horrors of intrusive advertising as any other operating system – in fact, more so, as they can block your entire screen. It's arguable that with data prices what they are, there's even more need for an ad blocker on your phone. iPhone and iPad users won't find a better one for Safari than Salavat Khanov's 1Blocker.
Available for: iOS
Free | 1blocker.com



Adblock Browser

Although you can limit the amount of pop-ups on mobile devices by going through to the browser setting and disabling pop-ups, nothing quite beats a dedicated browser that's created specifically to make mobile internet quick simple and less intrusive on your data package. For that purpose, Adblock is one of the best.
Available for: Android
Free | adblockbrowser.org



Adblock Plus

Those people who prefer to use Mozilla's Firefox over Chrome or Safari would do well to download Adblock Plus for their favourite browser. It works similar to the other software featured on this list and, like most of the other more popular extensions, Adblock Plus also blocks all known malware domains, too.
Available for: Firefox
Free | adblockplus.org



AdGuard AdBlocker

After the problems with Internet Explorer and the copious amounts of extensions that used to slow the software down to a crawl, Microsoft has been cautious with its new browser, Edge. You can get this ad-blocker for it though, and it appears to work pretty well.
Available for: Microsoft Edge
Free | edgeadblock.com

LIFE HACKS

4 STEPS TO AVOID BAD EBAY CUSTOMER SERVICE

Or where to really go when you need help on eBay

EBay is brilliant when you have a load of stuff that you're desperate to get rid of, but the flip side is that it can also be a nightmare when things go wrong.

The first response is usually to grab the phone and try to speak to their customer services department, but the service they offer is notoriously dreadful and most

people we know are not big fans of being put on hold for a long time listening to Eighties music. All is not lost though as there are a multitude of ways to resolve any issues you might have whilst avoiding this bad service, as there are plenty of eBay users out there that probably know more than the people who run eBay.



Sign in

For solutions to common problems, go to the Help & Contact page (found at the top of the homepage), but you must sign in for it to work

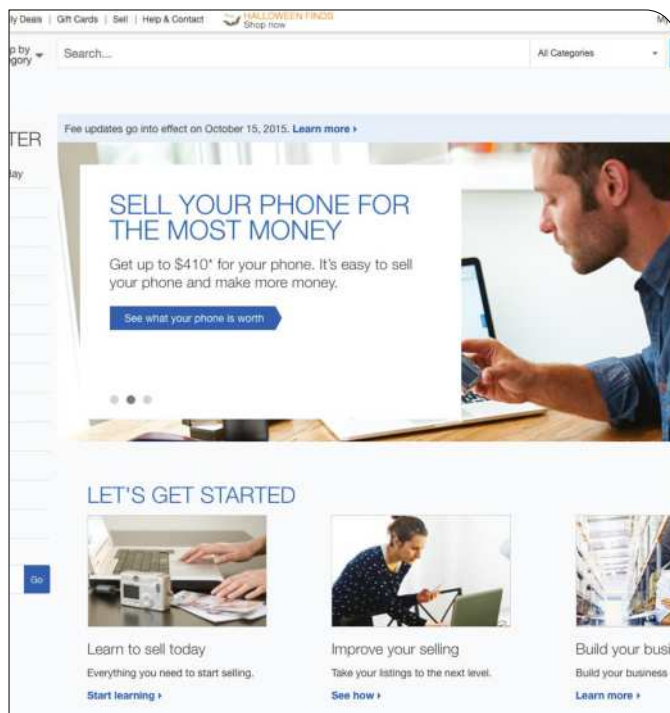
Slow emails

There is always the option to email the customer services team, but the replies can take a while and it still may be an automated response

Phone hurdles

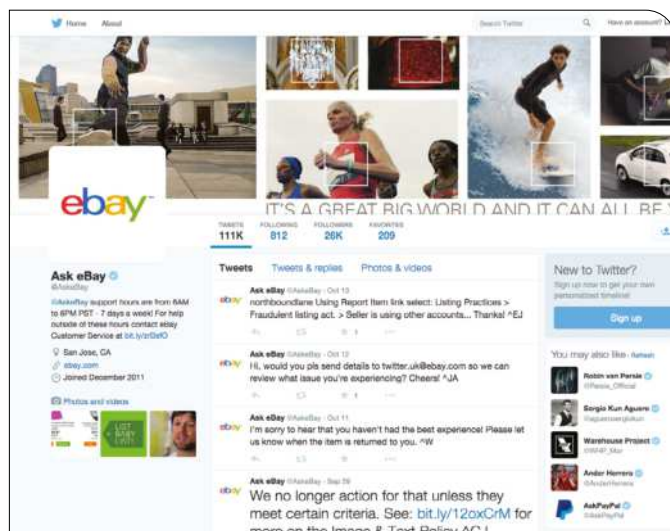
There have been many complaints about being put on hold for a long time. There's also the various automated stages to get through even before the phone rings

Most eBay problems can be solved without a phone call



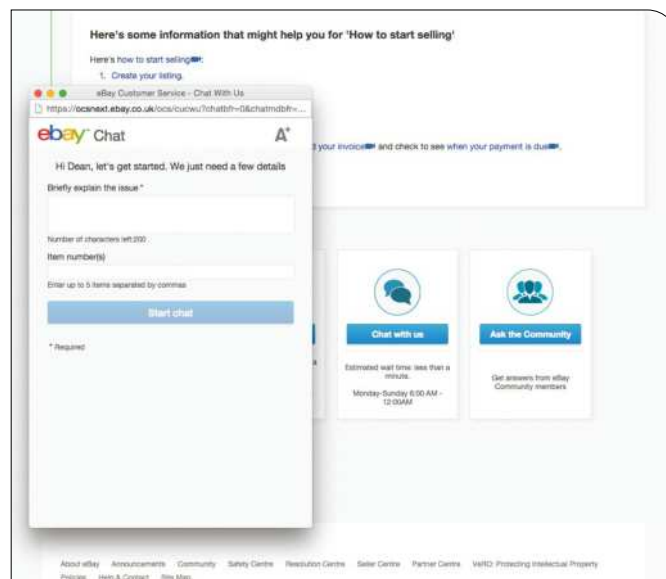
01 Basics of selling

If you're fairly new to the eBay world or are a casual user who's thinking of setting up an eBay business, then eBay's own Seller centre (sellercentre.ebay.co.uk) is actually surprisingly useful. Packed full of information on everything from what to sell to taking the best photos of your old dining table, there's every chance that your newbie query can be solved here on this page.



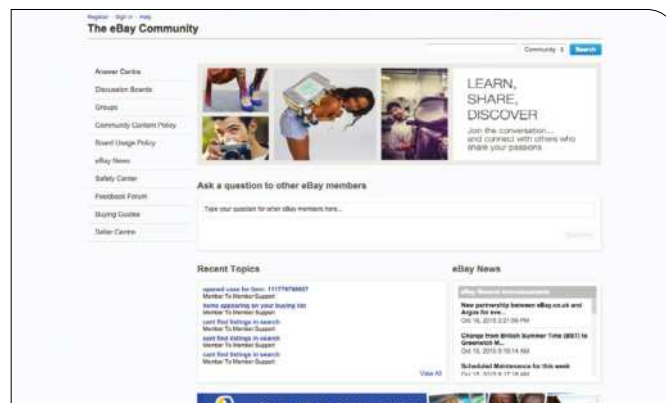
03 Send a tweet

For a fairly quick response from eBay themselves, you could try the Ask eBay Twitter page at [@Ask eBay](https://twitter.com/Ask eBay). They're open seven days a week from six in the morning until six in the evening (Pacific Standard Time) and although most of the responses are along the lines of 'We're sorry to hear that, why don't you email us', there's also the small chance that they might be able to help if the problem is relatively straightforward. After all, there's no need for you to spend hours on the phone on hold if it's a simple problem that it can be solved in 140 characters.



02 Fancy a chat?

One area of eBay's customer services site that we have had some success with in the past is eBay Chat. Head to the customer services pages at ocsnxt.ebay.co.uk/ocs/home and then click on Contact us at the bottom of the page. Click on the area you need assistance with and, hopefully, the Chat with us option will appear along with an estimated waiting time – this is usually only around a minute.



04 Care in the community

However, it's eBay's Community area (community.ebay.co.uk) where you're likely to have the best chance of finding someone to help you. Made up of a series of discussion areas, you simply post your question and wait for someone in the community to come back with an answer. Surprisingly, there are a lot of people out there who really (and we mean *really*) know their stuff about eBay.

There are several advantages to going directly to the Community area rather than trying eBay's customer services' numbers or emails. Firstly, as the eBay Community pages work like any other forum and in real time, there's every possibility that your query will be answered quickly and accurately by another eBay member. Also, as it'll be read by a large number of people, you may well get multiple replies with varying suggestions offering different approaches to your problem. Although this can get confusing if the advice differs wildly, it's good to understand that most problems have more than one solution.

Finally, by scanning through the questions already posted (or searching through the thread titles) you may well discover that someone's already had the same problem you're having and there may already be a solution posted for you. This then saves you all the hassle!

LIFE HACKS

UNSEND THOSE SHAMEFUL EMAILS

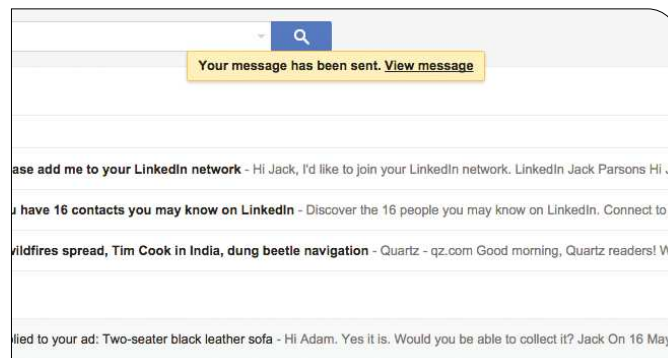
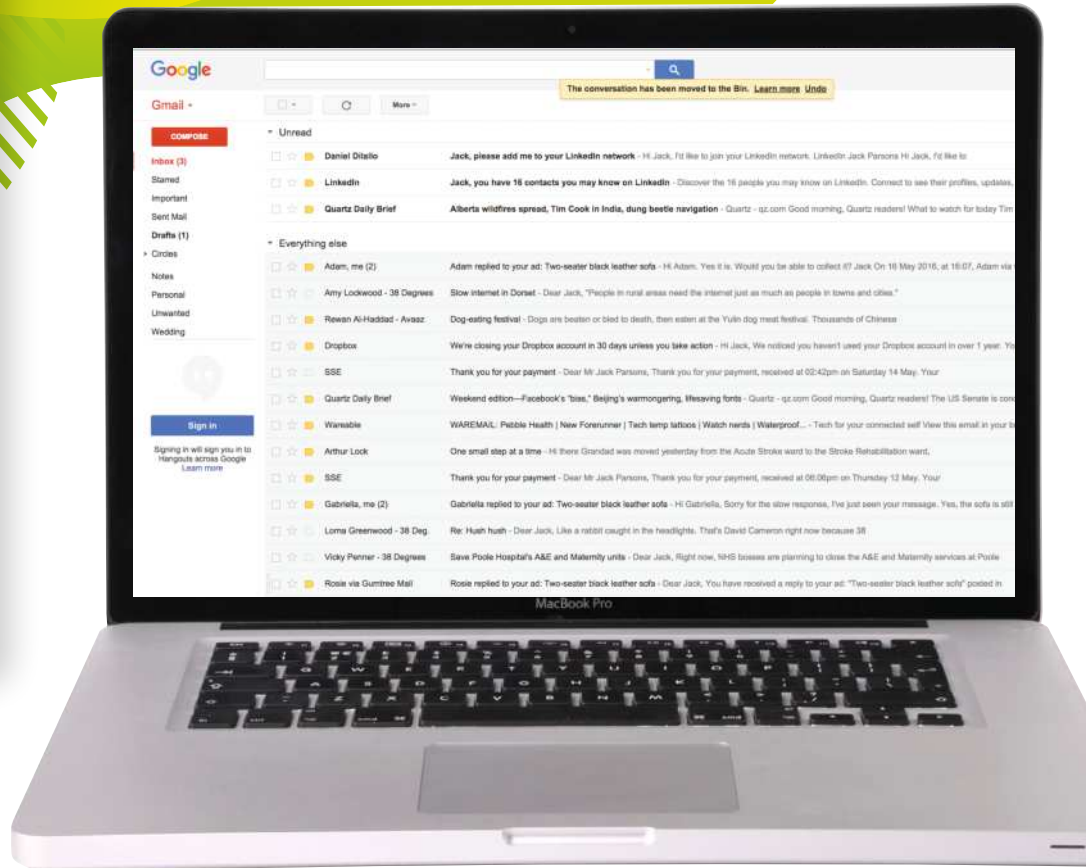
Recall errant emails with this ingenious Gmail trick

There are several reasons why you'd want to delete an email you've just sent, and they're all good ones. You might have forgotten to attach something, sent it to the wrong person or said something in the heat of the moment that you might later regret. Hindsight is a wonderful thing, and, finally, it would appear that someone at Google agrees with us, as Gmail now comes with a feature that allows you to 'unsend' an email you've just sent.

The feature is one that's been hidden away in the Labs section of the software for some time now, meaning that people could test a range of beta features that may or may not be included in the full software. Undo Send doesn't delete an email that's been sent, but it does give you the option to delete it before it goes. We'll show you how to enable it.

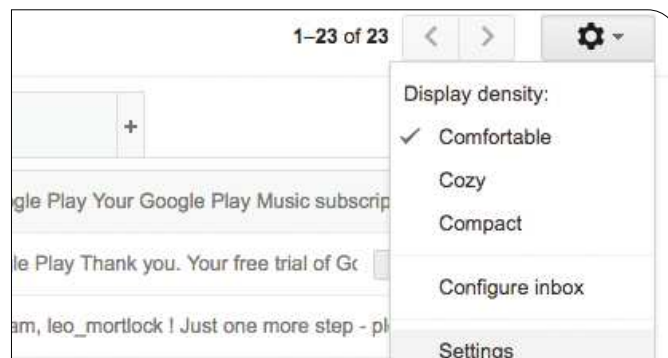
“Hindsight is a wonderful thing, and it would appear that someone at Google agrees with us

”



01 You've (not) got mail

It's difficult to delete an email once it's been delivered. You can, however, employ tricks to make it harder to send any embarrassing messages. The Unsend feature in Gmail has a delay feature that gives you a window of time to cancel the mail before it's sent.



02 Check out Settings

You need to check that the Undo Send feature is activated before trying it out, so start off by heading up to the Settings icon in the top-right-hand corner of your Gmail browser window and selecting Settings from the options available.

WHAT IF YOU DON'T HAVE GMAIL?

Although Gmail is the only email client that allows you to unsend emails, there are a number of third-party extensions for Chrome that offer a wide range of email encryption and deletion options. Here are three of the best, and while they all do a similar job, they're different enough to warrant investigating all three.



Feature-packed Gmail extension

This browser extension for Gmail is very smart indeed. Criptext can encrypt your outgoing mail, ensuring that your private correspondences are secure. It also lets you know when any sent emails are opened and even recall them at any time.

[Criptext for Gmail](#) | [Extension for Chrome and Safari](#) | Free



Second-chance emailing

Unsend.it works in a similar way to Criptext, but also gives you the option of editing an email even after it's been delivered to the recipient. Although you cannot completely delete an email you've sent, you are able to erase its contents – leaving just your contact details and the subject line.

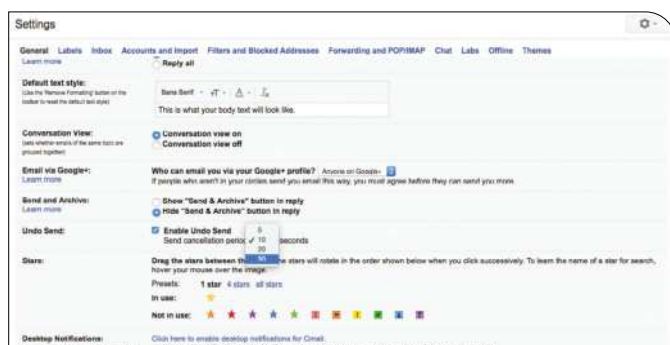
[Unsend.it](#) | [Works on all email clients](#) | Free



Patience is a Virtru

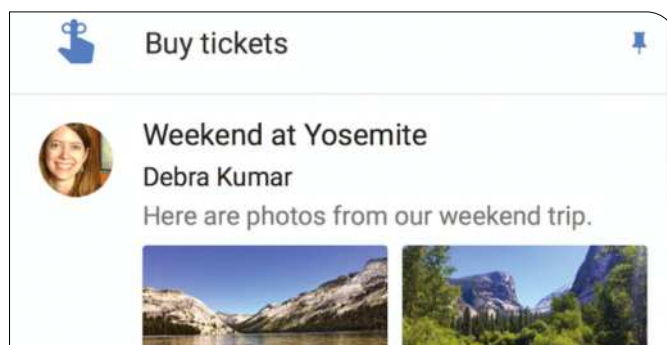
Those worried about the security of the emails they're sending might want to take a look at Virtru. Files and emails are encrypted before they're sent and you're free to delete any email at any time – even if it's been received and read.

[Virtru](#) | [Works on Gmail, Outlook, Hotmail and Yahoo](#) | Free



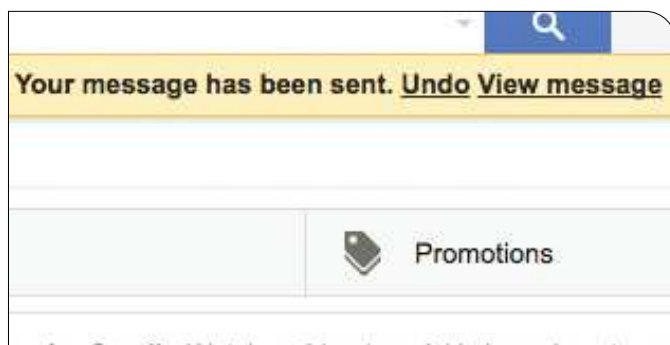
03 Every second counts

Look down the list of options and you should spot Undo Send. Simply click on the box to activate it and then pick a time in seconds for the length of the delay in sending your emails. You can only pick from five to 30 seconds, and we recommend going for the maximum amount to give yourself the best opportunity to cancel those email bloopers.



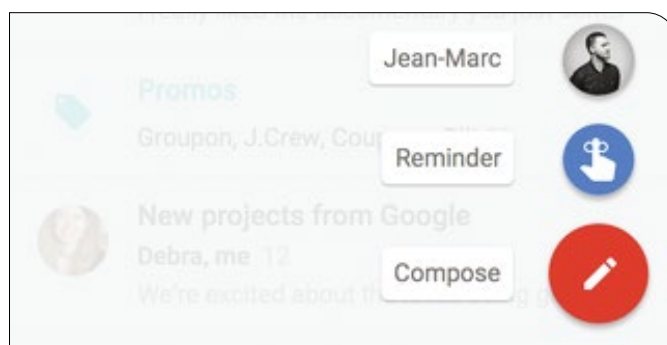
05 Unsend using Google's Inbox

Inbox is a Google app that simplifies the whole email process. You can flip through photo attachments without opening emails, and similar emails are grouped together intelligently to make finding exactly what you want quicker and easier. Like its bigger brother, Gmail also has the life-saving unsend feature, too.



04 Time to undo

Every time you now send an email you'll get this box pop up, informing you that although the email has been 'sent' you've still got a window of time to reverse it. Obviously this won't help if you wake up after sending a drunken email to your ex in the middle of the night, but it will certainly help if you quickly realise you've made an email error.



06 A ten-second delay

Unfortunately, there are currently no settings to tweak for this feature, as every email you send in Inbox automatically comes with a ten-second 'cooling off' period. It does mean that there's (very) small delay on every email you send, but we definitely feel that the pros outweigh the cons in this instance.

LIFE HACKS

STOP HACKERS SPYING ON YOUR WEBCAM

Keep the hackers out and make sure you're well protected

Are you being watched? If you have a webcam built into your PC or laptop, clever hackers can use it spy on you. Even worse, they might be able to use your camera as an entry point to access everything else on your computer. It sounds like something out of sci-fi, but it's all too possible.

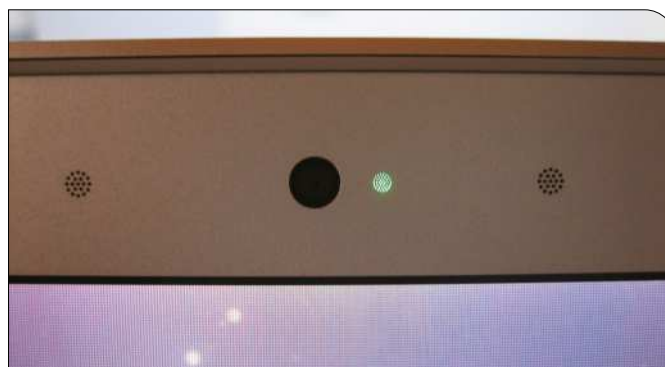
One of the most famous incidences of web camera being hijacked hit the headlines back in 2014, when a Russian website was found to be live-streaming internet-connected cameras from across the UK, from baby monitors to cameras in offices and bedrooms. Though this site was quickly shut down, today's web cameras are still at risk from being exploited in the same way.

In fact, US security firm Vectra recently proved how easy it is to hack a small D-Link web camera, which gained them access to all manner of corporate networks – even giving them the ability to go as far as adding code to prevent administrators from removing the hack. Although all that sounds scary, and you may be tempted to remove your cameras for good, we've got some common-sense steps to help make sure it doesn't happen to you.



01 Avoid attachments from suspicious emails

Think before you click, as attachments on spam emails are the main way that hackers get their software installed on your computer. Also watch out for pop-up windows offering free videos or music downloads, as these two can download dangerous .exe files to infiltrate your system.



02 Watch out for the warning light

Some webcams light up when they're activated, so if the one on your computer does and you're not using it, that's an indication that someone may be hacking your camera. If you're using an external camera then simply detach it from your PC when you're not using it.



HOW HACKERS GET CONTROL OF YOUR CAMERA

So how do they do it? Aside from scanning networks for any vulnerable operating systems (which is time-consuming), the most common way the hacker will get access to your webcam is via Remote Administration Tools (or RATs). These are items of software placed on networked computers so that a IT department or system administrator can access any computer to deal with faults or software updates. So if you're using a work or college computer, then this is the usual way that hackers will get access to your system.

Alternatively, RATs can be sent by email attachment – also known as Trojans. These are usually in the form of an .exe file that, when you download, spreads through your system giving the owner access to everything from your personal files to key logging and, yep, your webcam too. Thankfully, most email software (including browser-based ones such as Yahoo and Gmail) send suspect emails straight to spam, but if you have an email from anyone you don't recognise, then we recommend that you check with the sender before opening any attachments.



03 Kill the virus

You should be doing this anyway, but make sure that you have decent anti-virus software installed on your computer – one that covers both general malware (which is an umbrella term used to describe viruses, trojans, adware, etc.) and also, more specifically, spyware too. Norton is one of the best, but AVG offer a very good free solution.



05 Change your password

If you're still running your WiFi network on the same password that came with the router then it is definitely time to change it. Your wireless network will be much stronger if you change its password to something unique – don't make it something obvious like your name or anything personally connected to you like a birthday.



04 Stuck behind the wall

For added protection, we recommend installing a dedicated firewall too. Both Macs and PCs come with one pre-installed, and that should keep out most of the bad stuff, but they occasionally get it wrong and block safe applications, and can also slow the system down. To combat this, try installing a high-quality (paid) one.



06 Help is at hand

Hackers are getting ever more cunning, and have even been known to provide tech help over the internet – which then gives them an opportunity to send you a trojan to install on your computer. Only ever accept tech help from someone you know personally or a professional, reputable company.

LIFE HACKS

6 WAYS TO FIX YOUR PHONE

Mend your microphone and avoid battery woes

There is nothing worse than dropping your phone.

We all know the feeling: that agonising moment when it falls facedown onto hard concrete and you have to anxiously flip it over to find out how much damage has been done to your prized possession. If the worst of the worst has befallen your precious companion, you will find yourself with a completely wrecked touchscreen mercilessly leaking liquid crystal. The simple solution is, of course, to get your phone fixed. There are lots of online services that allow you to send your broken phone away to be repaired, like Quick Mobile Fix, iMend, iCracked or Carphone Warehouse's own Geek Squad. But for more minor breakages and problems, why not give it a go yourself?

Jamie Lauricourt, mobile phone technician of Quick Mobile Fix, recommends that you leave your phone in professional hands if you've got a broken screen or fingerprint sensor, but there are lots of smaller issues you can mend yourself. From solving charging troubles to mending microphones, read on to discover Jamie's top tips.

“
For more minor
breakages
and problems,
why not give it a
go yourself?
”

01 02

Fix a frozen phone

“If you find your phone keeps freezing when using your touchscreen or camera, it is always worth doing a phone reboot. Press the home key and the power button together for ten seconds and the phone will turn back on and reboot automatically – hopefully with no more issues!”

The myth of lost data

“We get lots of customers that are concerned that the buttons they have pressed or the rebooting they have tried will have wiped all of their data. Generally your smartphone data isn't wiped by system reboot attempts (apart from if this is selected through iTunes).”



03 04

Clean out your speaker

"Is your charger not working properly on your iPhone or are you struggling to hear who is calling you? You should try cleaning the offending ports or microphone with a toothbrush. The issue often caused by a build up of unwanted debris rather than a technical issue."

Resuscitate a dead phone

"If your phone looks dead and won't turn on, you can try a few things to bring it back to life," says Jamie. "First try leaving it to wake up by itself after an extended charge. If this doesn't work, connect the phone to your laptop and see if it makes a noise. If it does it isn't dead but needs some repair help."



05 06

Avoid charging troubles

Jamie urges Android users to avoid cheap, third-party charging leads. "Ensure you use the original lead as using an alternative will cause damage to the port and battery." He adds: "Do not charge the battery unless it has fully drained first and do not stop charging until the battery has reached capacity."

Don't always do it yourself

"Whatever you do, if the problem looks in need of a professional repair resist the urge to play technician," says Jamie. "We see plenty of devices which started off with a simple problem like an LCD issue and, because they've been fiddled with, other things have gone wrong."

PROTECT YOUR PHONE

The all-in-one solution

A brand that calls itself 'Lifeproof' is making a bold claim, but the Fre case lives up to its name. This rugged case can survive 6.6-foot (two-metre) drops, be submerged underwater for an hour and it protects against dirt and snow. A more expensive version called the Fre Power also includes a built-in battery pack.

Lifeproof Fre
£70 | \$80 | lifeproof.co.uk



Avoid scratched screens

Damaged displays are the most common injury for smartphones, so it's best to invest in a screen protector. Tech21's Impact Shield is available for a range of phone types and sizes and includes a self-healing skin to let it handle more scratches than most.

Tech21 Impact Shield Screen Protector
£20 | \$35 | Tech21.com



The best-looking rugged case

Otterbox is one of the biggest names in rugged phone cases, but its tough shells have always been more functional than fashionable. The new Otterbox Strada series changes that, with an elegant leather-bound case that still offers certified shock resistance to protect against drops.

Otterbox Strada Series
£40 | \$55 | Otterbox.co.uk



Keep your handset safe and dry

Not including the number of phones dropped down the toilet, water damage is responsible for killing 18 per cent of handsets. If an Otterbox is too bulky, try one of Overboard's waterproof pouches, which are available in a range of sizes.

Overboard
£19 | \$25 | Overboard.com



LIFE HACKS

SWITCHER'S GUIDE TO CHANGING PHONES

Find out how to migrate data from iOS to Android and back again

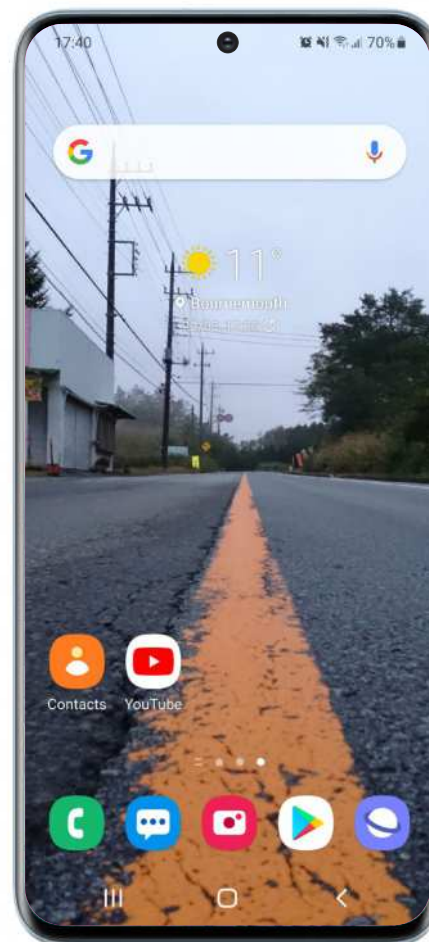
Change is a good thing and that's never been more true with smartphones or tablets. Technology in both the Android and Apple camps has developed to such a point that there's now very little to separate the two. But if you're an iPhone user and fancy finding out if the grass really is greener on the open source side, or if you're an Android user that craves Apple's early updates, then there are a few things you should know.

Firstly, have you really weighed up the pros and cons of each device? Is it really better than the one you already have? And is it worth the hassle? Let us help you.

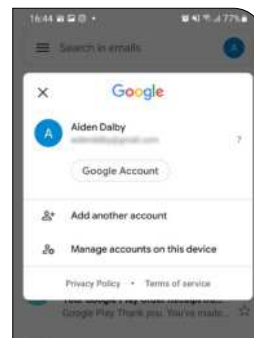
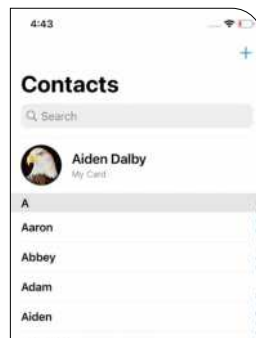
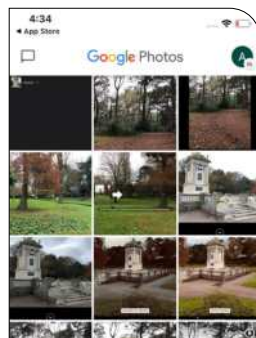
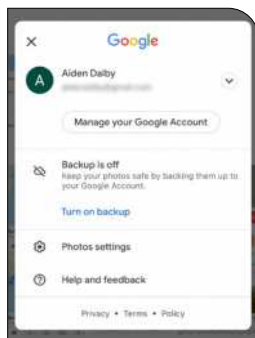
SHOULD YOU JOIN THE ANDROID REVOLUTION?



- + Better choice**
A wider range of options, stunning displays and the best cameraphones. If you like a variety, then it has to be Android
- + Customisation**
The Android OS is far more open-ended than iOS, so you can customise your screens as much as you like
- + Expandable**
The majority of Android phones have an SD card slot to enable you to boost your phone's memory by up to 1TB
- Syncing**
Without the Apple software, transferring music and photos with a PC isn't as intuitive as with the iPhone
- Browse the store**
There are more apps on Google Play, but without Apple's strict approval process, there's also a lot of rubbish too
- Security issues**
Like Mac versus PC, the Android OS isn't as secure as the Apple one, meaning it's more prone to security issues



Move photos, contacts and emails from iPhone to Android



01 The power of the cloud

The easiest way is through Google Photos. Download the Google Photos app to your iPhone, sign in with Google, then select Back up & sync.

02 The magic of the internet

Your iPhone's library is stored in the cloud. So log in with your Google account on your new Android and you'll be able to instantly view your library.

03 Contacts

Go to Settings>Mail>Contacts>Calendars>Account. Open iCloud, turn on Contacts and merge your iPhone's contacts with iCloud. On a computer, head to icloud.com.

04 Click export

Log in with your Apple ID and click Contacts. Select the contacts, tap the cog icon and click Export vCard. They will download as a file you can import to your new device.

05 Log in to your email

If you have a Google Mail account then it's just a case of logging into your emails on your new Android device to access all of your messages.

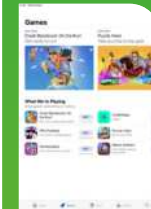


WHAT YOU GET FROM APPLE'S iOS



- + User interface**
The iPhone's UI is a thing of beauty and unrivalled in its easy of use – designed so (almost) anyone can use it
- + Quality build and support**
While the iPhone isn't cheap, you get what you pay for with a stunning design and build quality
- + Up in the clouds**
The way that Apple devices all work seamlessly together through iCloud is really very impressive
- Outdated?**
Rather than leading the pack, it seems more and more like Apple are playing catch-up with Android phones
- Memory problem**
64GB for the basic model and there are no SD card slots to expand the memory
- The screen**
The Super Retina XDR Display is fine, but compared to the S21 from Samsung, it is a little underwhelming

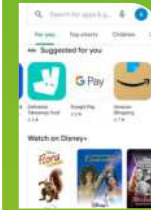
So how easy is it really to transfer my music across?



We're glad you asked us that and the answer is that it's surprisingly easy. From iOS to Android, just connect your Android device up to a computer that contains your music library and it should appear on your PC in a list of devices in the left-hand window. Open this up and then drag your library into the Music folder. If you're using an Apple Mac, you'll need to download Android File Transfer first.

It's even easier the other way around though, as music files will be transferred as part of the Move to iOS feature – as long as they're DRM-free.

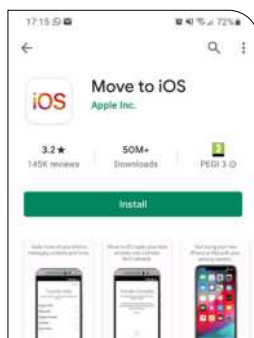
And all those apps I've downloaded, can I transfer those across too?



Well, yes and no. The bad news is that regardless of the device you currently own, any apps you've paid for on the relevant store are not transferable – meaning that you'll have to buy them again. The good news is that both stores are now large enough so that it's likely your favourite apps on one store will now be available on the other – albeit at a financial cost.

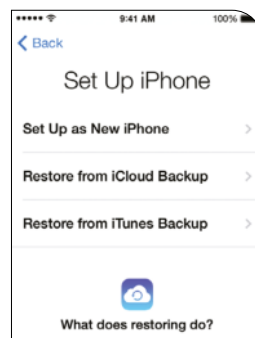
The iPhone's Move to iOS feature sadly doesn't transfer apps, but it does give you suggestions of some free apps that are available on the App Store. This is as well as automatically adding any Android apps available on the App Store to a wish list.

Move photos, contacts and emails from Android to iPhone



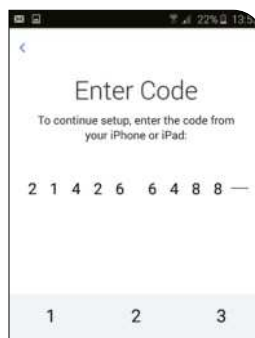
01 The Move to iOS app

Thankfully, moving your data from Android to iPhone is a breeze. Firstly, you'll need to download the Move to iOS app to your Android device.



02 Move Data from Android

This only works when setting up a new device. Work your way through the set up until you get to Apps & Data, then tap Move Data from Android.



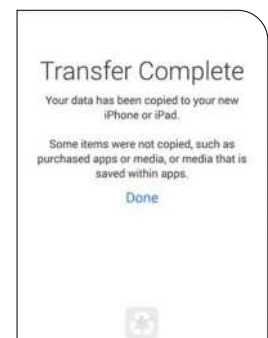
03 Enter the ten digit code

Open the Move to iOS app on your Android and go through the screens until it asks for a code. Go back to your iOS device and tap Continue.




04 Transfer

Wait for the ten-digit code and enter the code on your Android. Now pick through the content you want and tap Next to transfer. This can take a while.



05 A fine finish

That's basically it. Once everything's downloaded, just tap Continue on the iOS device and follow the on-screen instructions to finish setting everything up.



LIFE HACKS

8 BATTERY MYTHS BUSTED

The truth about what does and doesn't harm phone batteries



£65 | \$70
zagg.com

powerstation wireless xl

This wireless portable charger will charge your phone, tablet or other Qi-enabled device on the go thanks to its 10,000mAh internal battery and fast charge capability.

FALSE

You should always charge your phone to 100 percent

Charging your phone to 100 per cent each time actually causes a slight degradation in lithium-ion batteries. It's a small difference, but it is there. These types of battery last longest when they're being drained and then recharged in a continual cycle rather than being charged at 100 per cent (it's a bit like exercise for them).

TRUE

Charging your phone overnight wastes energy

Plugging in a device to charge is a nightly ritual for many of us, so is this a waste of energy? Yes, but probably less than you think: modern-day regulations mean that today's chargers go into a 'standby' mode when your device is fully charged, so you're only wasting a couple of pounds' worth of energy per year.

FALSE

You should always fully charge and discharge your phone

So-called 'battery memory' – where batteries degrade if you don't let them drain fully before recharging – is a real phenomenon, but it only applies to rechargeable nickel–cadmium and nickel–metal hydride batteries (the sort you'd pop into a remote control or toy car). The same is not true of the lithium-ion batteries inside phones and laptops.



FALSE

Only use the charger that came with your phone

The right charger is important for keeping your phone and battery safe while charging, and preventing any fires or meltdowns along the way, but third-party alternatives are fine – as long as they're from a reputable, well-known brand. What you must never do is use a cheap, no-label knock-off, as these are likely to be dangerous.

TRUE

Heat harms your smartphone's battery

Lithium-ion batteries don't like heat: they wear out and degrade much faster when they're hot, which is something to remember the next time you're tempted to leave one in a hot car in the middle of summer. Those temperature recommendations in your phone's instructions (that you never read) are there for a reason.

FALSE

Letting a battery get to zero charge is dangerous

When lithium-ion batteries are completely drained, they're at their most dangerous. You don't need to panic, because modern packs are built to disable themselves rather than explode, but you'd then need a replacement. If you're leaving a device switched off for a while, leave it at a charge of around 40 per cent rather than zero.

TRUE

Every battery has a finite life expectancy

Batteries have what's known as a charge cycle lifespan, after which they'll stop performing reliably or may not even charge at all (you might have seen this on really old handsets). The charge cycle limit is a large one – somewhere in the region of 500 before degradation starts – but bear it in mind every time you're recharging.

FALSE

Fast charging is better than slow charging

Many phones like the Samsung Galaxy S8 now come with some form of 'fast charging' feature which is convenient but also slightly harmful to your device – batteries work best when they're charged and discharged at a slow, steady rate. If you can afford to wait for the battery to replenish, it's better to disable such a feature first.



116

8 ways to survive
your first marathon



120

Make the perfect
smoothie



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How to carve
like a pro



106

Build a sandcastle
like a pro



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Stand up on
a surfboard



118

Grind coffee
without a grinder



LEVEL UP

Improve everything you do with these guides to mastering cool new skills quickly and getting the best out of everything

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LIFE HACKS

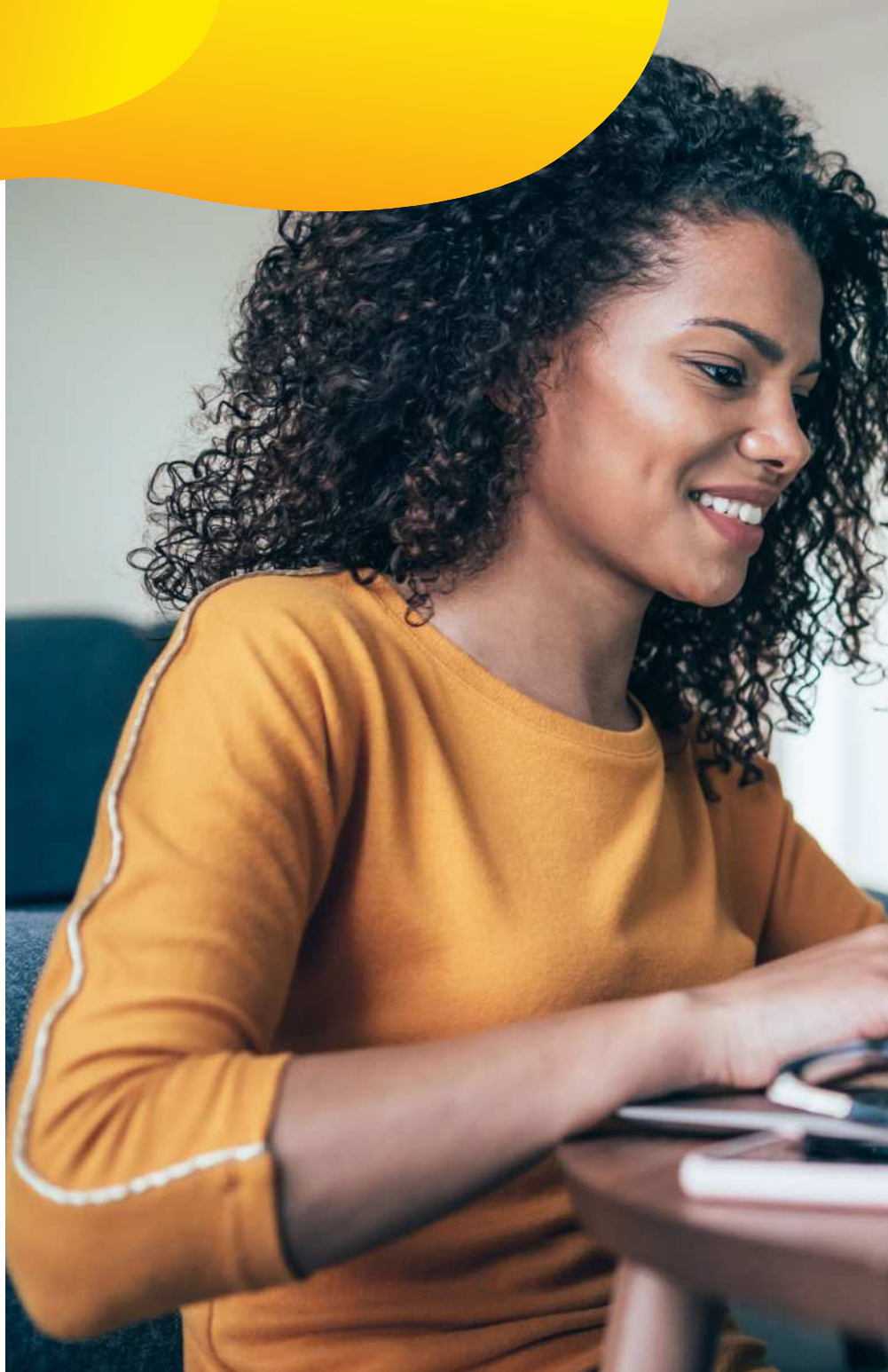
WRITE A NOVEL IN A MONTH

A tome wasn't built in a day, but 4 weeks is doable

Throughout November every year hundreds of thousands of people take part in National Novel Writing Month. Also known as NaNoWriMo, participants aim to write a 50,000-word novel before the month is over – that's 1,667 words a day. That may sound like a daunting task, but the NaNoWriMo has a passionate community of users, with over 430,000 participating last year, who spur each other on. The NaNoWriMo website (nanowrimo.org) also motivates you by awarding badges for key milestones.

There is no formal prize, most participants do it for the love of writing. But there have been those who have gone on to find fame and fortune: over 250 novels written during the event have been published. Most notably, *Water For Elephants* by Sara Gruen was written for NaNoWriMo in 2006. Not only did this novel go on to be published worldwide, it was also adapted into a movie starring Reese Witherspoon and Robert Pattinson.

If you've ever thought about writing a book, this is the time to try. Read on to find out how to get the most out of NaNoWriMo and discover the best gadgets for writers.



01 Getting started

The event doesn't begin until midnight, 1 November, but you can sign up for it at any time of year. Once you've made your account and selected where you will be writing from you can see the region's Municipal Liaison. These people moderate the forums as well as organise local events that you can attend. Once you're all set up nothing is stopping you from jotting down your ideas.



02 Earning your badges

On the homepage you should see your 'My NaNo' profile, this will have information about yourself and display your badges. There are three types of badges: participation, writing and personal achievements. You award these to yourself by either entering information or by doing fulfilling certain requirements on the website. You don't receive anything for earning them but it's good to show off your milestones.



GADGETS FOR WRITERS



Livescribe Echo 2 Smartpen

This pen uses Bluetooth to send what you're writing to a smartphone or tablet. Its companion app can convert your notes into text and has a search



Olympus WS-853

If you're struggling to get your ideas on paper, why not try telling it aloud, recording it and typing it up after? This dictaphone has great quality audio and is easy to use.

£60 | \$65 | olympus.com



Varidesk Pro Plus 36

Avoid any back problems during a long writing session with this adjustable standing desk. It sits easily on existing desks and offers plenty of room.

£400 | \$400 | vari.com



Hemingway Editor

Simply copy and paste your work into this web app and it will highlight any unnecessary descriptions, sections of dense text, and tell you how readable your writing is.

Free | hemingwayapp.com



Logitech Combo Touch for iPad Pro

A full-size backlit Mac keyboard built into an iPad carry case. It has an auto-wake feature so when you open the case the device turns on.

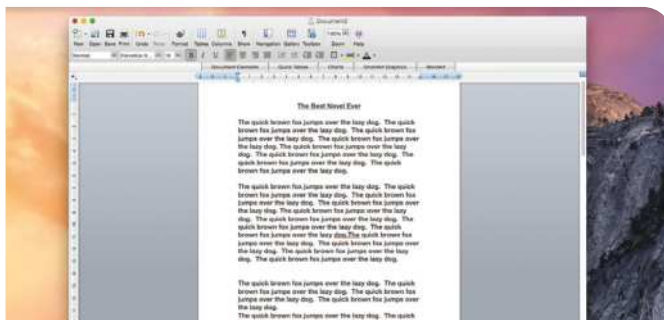
£170 | \$180 | logitech.com



Yoropen Superior Ballpoint Pen

For those who like to write on pen and paper, the Yoropen allows you to see what you're writing more clearly and is designed to reduce hand strain.

£6 | \$8 | yoropen.com



03 Just keep writing

You need to write 50,000 words before the month ends; the organisers say, "it's challenging, yet doable". This equates to 1,667 words a day and writing that amount whilst working or studying among your daily chores may seem like an impossible task. Thankfully, NaNoWriMo offers help to those who need it. You're not expected to write the greatest novel of all time, the goal is just to finish it.



04 Get professional help

You don't write your novel on the website, the site is there purely for encouragement and to help you finish. You write your book however you wish, be it by hand or on a keyboard. On the website you can find pep talks from established authors, scoreboards showing which locations are writing the most, livestreams with writers answering questions and more tools available to keep the writer's block at bay.

Main Image Getty Images

LIFE HACKS

THE PERFECT HOME CINEMA

Some simple tricks will greatly enhance your projector experience

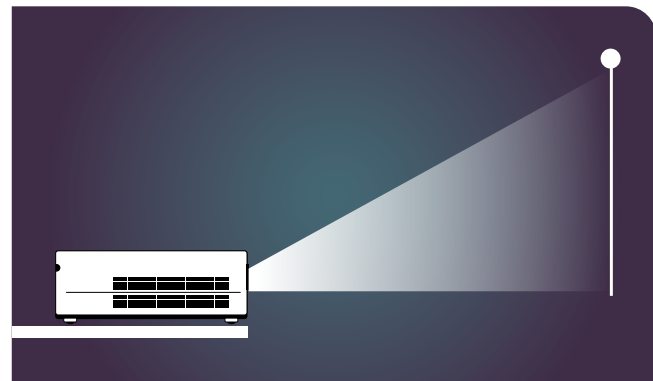
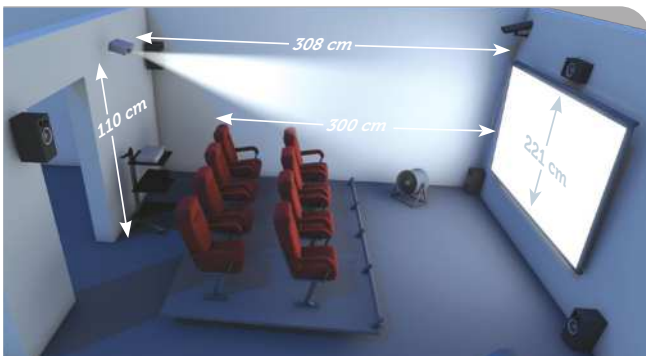
Most people take little time setting up a new projector and instead simply place it in a location that feels right and which produces an adequate image. There is nothing wrong with this method, but we would like to point out that your experience can be enhanced greatly by following a few simple tips that cost very little to take advantage of. Projectors are no longer just for the rich who have huge rooms to project a massive display. They can now be bought at reasonable costs and the end results, with our help, may be more

surprising than you ever expected. We will show you how to place your projector to gain the best possible image, what type of stand to use and also highlight how to tweak your projector for optimum performance. By the time you have finished, you should be able to enjoy films and TV shows on a huge display, irrespective of the size of your room. You can set up a home cinema today that wows your friends and you can also spend a little bit of time to make the viewing experience as impressive as possible. It's well worth the effort.

“ Set up a home cinema that wows your friends ”

01 Placement is key

Make sure you have a tape measure handy and that you know the throw ratio, noted with two values such as 1.8-2.2, of your projector before you consider placement. The height of your ceiling should be considered first because it will dictate the screen height and width. Subtract three feet from your ceiling height to calculate your maximum screen height and then multiply this value by 1.33 for 4:3 aspect ratio screens – 1.78 for 16:9 screens – to calculate the maximum screen width. Multiply the screen width by the minimum throw ratio (1.8 in the example above) to calculate the distance the projector needs to be from the wall. Most projectors project an image upwards, meaning that the bottom of the screen is in line with the base, but you can ceiling-mount them and invert the screen so they project downwards, which is useful for low ceilings. Both methods use the same calculations so your method will be determined by available space and your general viewing preferences.



02 Get the right mount

Choosing how to secure your projector may feel like a secondary concern, but it is actually of vital importance. If you want to mount it to the ceiling, this will be a permanent solution, but if you use a stand this can be moved easily despite taking up some floor space. The natural upward projection of screens means that for a ceiling-mount, it will have to be placed upside-down so lens shift would be a desirable feature, but also consider cabling which can look unsightly. Floor stands have the advantage of allowing greater accessibility and they also tend to have much higher load limits which is ideal for large projectors, plus the installation process should be as simple as following the instructions and attaching the projector in minutes. Ceiling-mounts will require more time and consideration of the loads incurred for safety so we can conclude that each offers advantages and disadvantages.

03 Screen or white wall?

When we think of projectors, we tend to only think of images projected onto a wall. This is the cheapest way to display movies and it will work well, but there are many reasons why you should consider a projector screen. Firstly, they are affordable and even the larger screens are pocket-friendly. Secondly, they offer realistic contrast and colour saturation whereas a wall can tend to make the colours look washed out. Thirdly, the simple inclusion of a black frame boosts the image quality substantially and, unless you are happy to paint a square on your wall, a screen is the best way to make the most of your projector's quality components. Remember that many projector screens can be rolled down and stored almost invisibly when closed so we have to say that the minor expense of investing in a projector screen will make all of the difference to your viewing pleasure. It's a small price to pay on top of the cost of the projector.



04 HDMI is king

Many projectors still support legacy connections, but if you want to make the most of your 1080p projector you should be using one with HDMI capability because these give the best performance. The debate continues with regards to if all HDMI cables are the same, but it is true that signal loss can occur if long cables are used. This is where a bit of research will pay dividends and we would suggest to do check the reviews of HDMI cables. The rule of thumb is that the signal will start to degrade around 50 feet, but you can use HDMI extenders to increase this range and keep the signal perfectly intact.



05 Create a perfect sound

Setting up a surround-sound system follows similar logic to ensuring that your projector is placed correctly to display a high-quality image. Small changes can make all of the difference between adequate sound and an immersive experience. Positioning should be taken care of by the instructions that come with most surround sound systems. You will also need to consider cables and how you can manage them. Some are available that can sit under carpets and you can also purchase accessories to bundle cables to reduce the clutter. The minimum setup you should consider is 5.1 which combines two rear and two front speakers with a subwoofer and a centre speaker. 7.1 and 9.1 are also available, but remember that these will require precise placement and more consideration of cables. If you are really short of space, it could be worth considering a soundbar because they can offer excellent sound quality in an enclosed environment.



06 Putting things into focus

Modern projectors are as easy to focus as a camera and the best tools you have to judge sharpness are your eyes. Turn the focusing ring while standing exactly where the projector is and make sure that you have done all of the precise placement first. You should also ensure that the screen size has already been set to your requirements and then deal with focusing after. If you are within the range of the projector, focusing really will be as easy to turning the focus ring and waiting until it looks sharp to you.



MOVIE MUST-HAVES



Paramount Home Cinema Chair

Like the ultimate La-Z-Boy, this leather seat comes with motorised recliner and foot plate, as well as a cup holder for your drink.



NEC PA622U WUXGA

Lens Shift gives you more flexibility when deciding how to mount your projector and the NEC PA622U WUXGA is an affordable option with this feature.



Roth Sub Zero II

An affordable soundbar with Bluetooth connectivity, wall-mountable options and analogue and optical inputs. Perfect for a smaller room with limited space.



OmniMount 3N1-PJT ceiling mount

With adjustable tilt and pitch, plus universal compatibility, the 3N1-PJT could be the ideal ceiling mount for many people.

07 Zooming is optional

Using zoom is optional and is dependant on your circumstances and the size of the room. You may have the space to make the screen larger with zoom when using a projector screen, because the edges of the image can blend in to the black surround invisibly. It is also advisable to deal with focusing, pitch and yaw before you zoom in as you will be able to spot any flaws when the zoomed image touches the edges of the screen. Simply having a screen to zoom in to with the zoom ring on your projector makes the process easier than using a wall.

08 Manage roll, pitch and yaw

'Roll' is the term that describes how horizontally level the projector is. Use a small level on the projector and adjust the mount until it is at the same angle as the screen to achieve zero roll. Pitch highlights if the projector is pointing up or down and you can use a small level to ensure the front is at the same height as the back. 'Yaw' is different and requires moving the projector from side to side. Lens shift will also help you achieve a perfect yaw setup.

LIFE HACKS

10 WAYS TO BECOME A SPOTIFY POWER USER

Get the most from the world's most popular music-streaming service



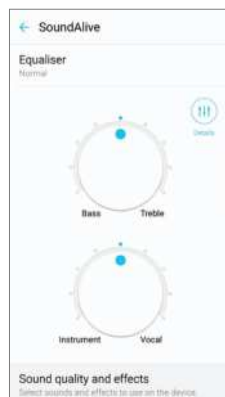
Of all the many music-streaming services you can now get on your computer or mobile, one of the first and still the best is Spotify. Easy to use and featuring music from (almost)

any artist you can think of – The Beatles recently had their back catalogue added! – whether you're looking to stick to the free version or become a premium user, you'll find that lurking underneath its deceptively simple exterior is a fully functioning and feature-packed music player. The object of this workshop is to help you get the most from Spotify by highlighting some of the features that you may not have come across. From adding lyrics to your music, to swapping playback between devices in the blink of an eye, we'll take you from being a Spotify newbie to a pro user.

£40 | \$58
akg.com

AKG K451

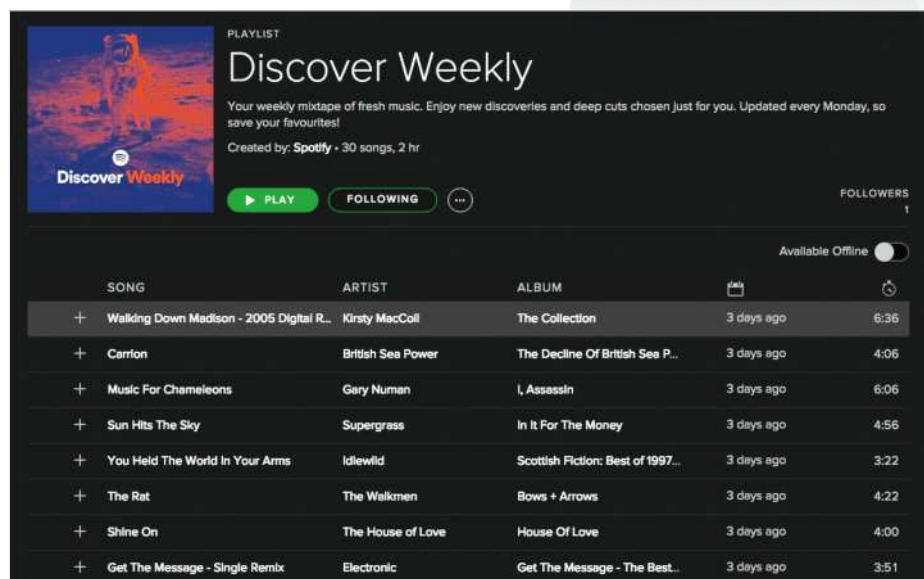
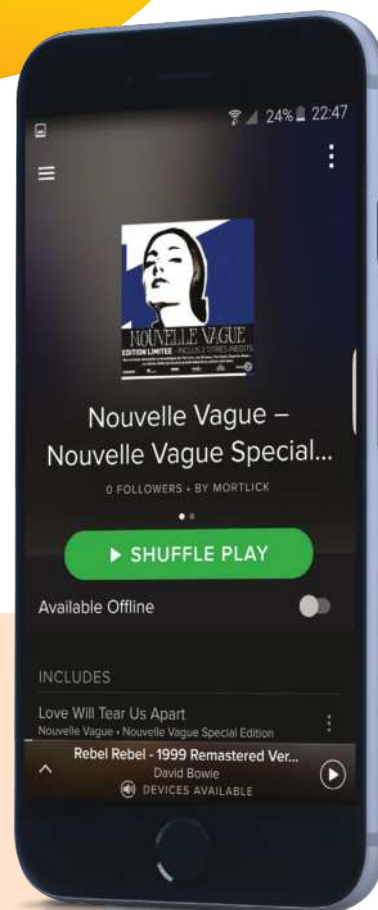
The award-winning, incredibly good value AKG's K451 headphones deliver a crystal-clear sound quality that can easily match headphones that cost considerably more



01 All things being equal Spotify comes with a built-in equaliser for mobile, so you can tweak settings for individual tracks – just head to Settings. The equaliser is different for iOS and Android devices, and, although the computer version of Spotify doesn't come with this built-in, you can download a plug-in like Equalify Pro.

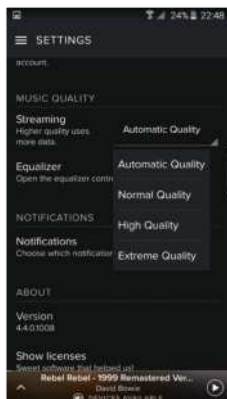
02 Play your music offline

The majority of Spotify members use the software on mobile devices, which is great if you're linked to a Wi-Fi connection, but will eat up your data allowance if you're out and about. If you sign up for the premium edition for £9.99/\$9.99 a month, you can download entire albums and playlists to your device and listen to them offline.

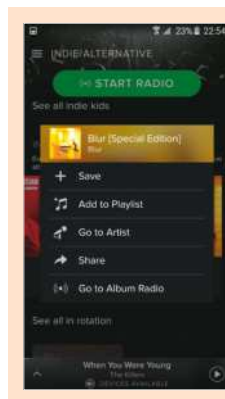


03 Discover new music

A new feature introduced last year, Discover Weekly, is a smart playlist that's automatically updated every Monday just for you. Smart is definitely the key word here, as Spotify has employed algorithms to check other people's playlists and match them with yours to add a series of recommendations it think you will like. The results are impressive – you'll find the Discover Weekly playlist at the top of your Playlists on the left sidebar.

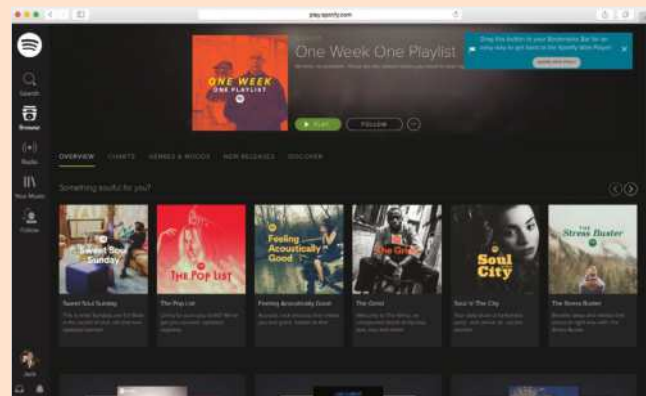


04 Get a higher bit rate
Hardcore audiophiles looking to get the highest sound quality will also want to upgrade to the premium service. While freemium users have a choice of bit rate between 96kbps to 160kbps for most tracks – depending on the device they're using and their internet connection – if you subscribe then you can crank this up to an ear-pleasing 320kbps. Just go to Settings and select Streaming Quality from the menu options.



05 Touchy feely
Tapping and holding down on album artwork does a couple of things, depending on what system you're running Spotify on. For Android it brings up a list of options (including adding a track or album to a playlist, or heading directly to the artist's page), while on iOS you will get something called Touch Preview, where it instantly plays the song or playlist when you press on the album art – Touch Preview will be heading to Android soon.

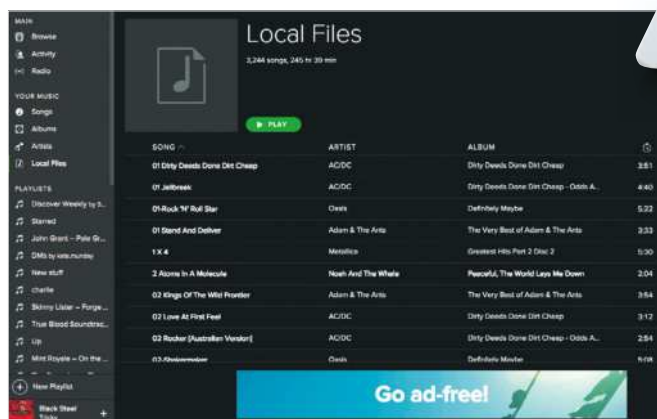
06 Spotify on the web
There are many ways you can listen to your Spotify library, including via a browser, which is useful for when you're at work or want to play your music on a friend's computer. Just head to play.spotify.com/browse, sign in and then click on Your Music to access your library remotely.



07 Swap between devices
One of Spotify's neater features is the ability to swap playback on any devices that are logged into your Spotify account. Say you're playing music on your phone while you're out, and when you get back you want to swap to your computer or a compatible speaker or TV, all you have to do is tap on Devices Available at the bottom of the Spotify screen, pick a different one from the list available and the song will continue playback on the new device.



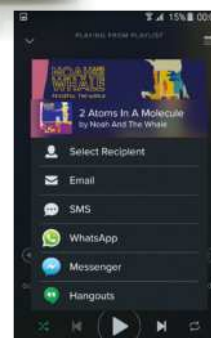
09 Import your music library
If you want to play all your music via Spotify and bypass iTunes altogether (or whatever other music software you play your music through on your computer) then it's easy enough, much easier than you might think. On the sidebar on the left, click on Local Files under Your Music and you can then scroll through and play any music stored on your computer – Spotify Premium members can also import their tracks too.



08 Add lyrics to your songs
Eagle-eyed types will probably have spotted the Lyrics button at the bottom of the desktop version of Spotify, so all you have to do is tap on this for the lyrics to scroll through as the song plays. Although it's not automatically included with the mobile version, you can download the Musixmatch app to do the job for you.



10 Share the love
Although sharing and collaborating on playlists is easy enough, sometimes you're listening to a specific song (maybe one you've just discovered) and want to share it with a specific person. Easy! Go to Options > Share > Send to... and you're given a range of choices to send a direct link to the song that's currently playing – via SMS, email, WhatsApp, Facebook Messenger, and so on.



LIFE HACKS

BECOME A YOUTUBE SUPERSTAR

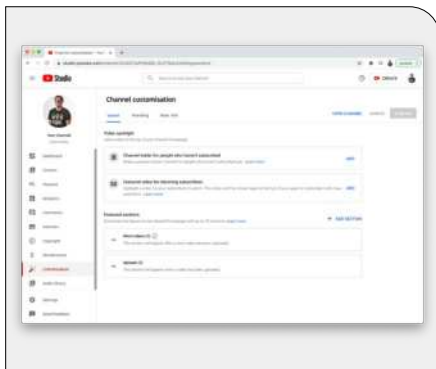
Turn a hobby into a profession by becoming a YouTube vlogger

We've seen all the 'YouTube sensation buys mansion in Hollywood Hills' stories and maybe, just maybe, you've thought that you'd like a slice of that particularly flavoursome pie. There are thousands of people out there making a tidy living out of recording video blogs and posting them for all to see, but don't think for one minute that it's easy. For every YouTube millionaire, there's a hundred people

struggling to make small change. If you have a good topic in mind, an angle to give it some originality, the ability to record yourself without clammering up and a sense of humour too, then you're halfway there already. This workshop has been written to help you get the other half to succeed. We can't promise that you'll be a millionaire this time next year, but now at least you'll be prepared.

“ There are thousands of people out there making a tidy living out of recording video blogs ”

6 steps to world-wide YouTube fame



01 First steps to stardom Your first step to YouTube fame is to create a channel. This is simple because if you have a Google account then one will be created automatically. If not, set one up now, adding a suitable cover image, profile pic and username.



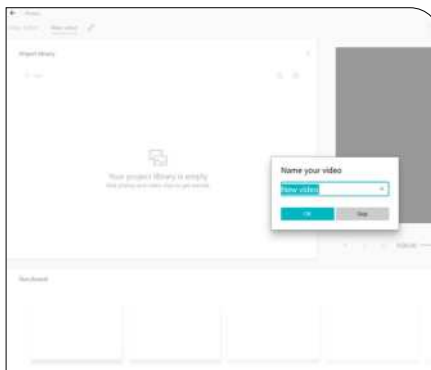
02 Prepare a script You want to make sure you're prepared when it comes to filming your first YouTube video, so take some time out to write a script. You can always adapt it slightly when filming, but it'll make the whole process much quicker.



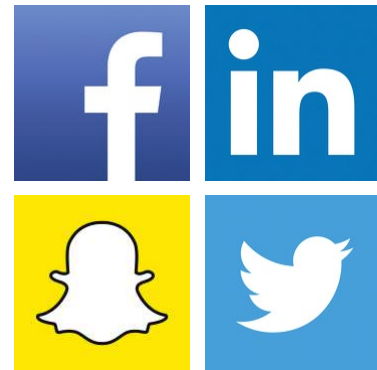
03 Location, location, location Now work out where you're going to film. What will your backdrop be? If you're filming in your bedroom, make sure that there's not a pile of dirty washing in shot and try to put up posters of the topic your filming.



04 Lights, camera, action! You'll probably be nervous when the camera's pointing at you and the red light is flashing, so as we mentioned, the trick here is to know what you're going to say. Have fun and make your passion for the subject come through. It gets easier with practice – promise!



05 Create a masterpiece When the video has been shot, it's time to edit it. Here's where you can trim out any mistakes or bits you're not happy with. Either use the video-editing software that comes with your PC or look online for an alternative. There are plenty of excellent free ones out there.



06 Get yourself known Getting your channel noticed isn't always easy, but firstly it's wise to add as many tags as possible so that your channel will show up in search results. Then make sure you publicise it on all your social media accounts and ask your friends to share it too.

Assemble your video studio

Killer camera

Able to shoot 1080p HD video and over two hours of good battery life, this Sony camcorder is one of the best that's on the market and it's got a great price too.

Sony HDR-CX240E Handycam
£120/\$170 | sony.com



Try-hard tripod

We chose this tripod because the legs can be folded and used as a handgrip, making it perfect for handheld shots

JOBY Handypod Tripod
£23/\$25 | joby.com



Magic mic

Not only does it look rather cool, but the Snowball is also a powerful microphone that's capable of delivering crystal-clear audio straight to your Mac or PC.

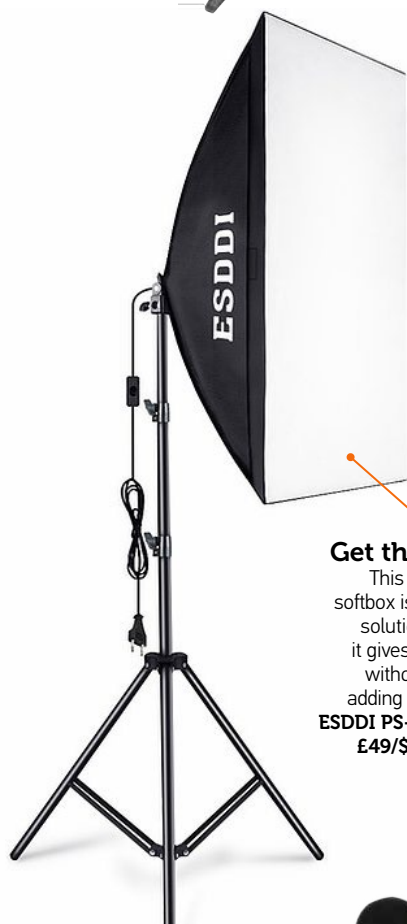
Blue Microphone Snowball
£67/\$50 | bluemic.com



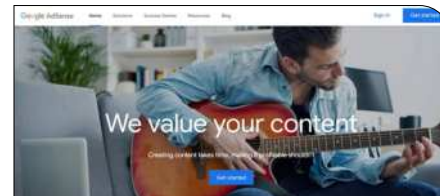
Get the light right

This reasonably priced softbox is the ideal lighting solution for vlogging as it gives you a warm light without blinding you or adding glare to the video.

ESDDI PS-040 Softbox Kit
£49/\$50 | esddis.com



You've got the fame, now make the fortune



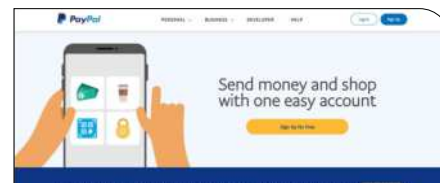
01 Google AdSense

AdSense is an easy way to make some money through YouTube. Adverts are automatically attached to your videos and you get paid every time someone clicks on them.



02 Contact the experts

If you're getting popular (around 50,000 subscribers) then it's worth talking to one of the social media talent agencies set up specifically to promote online personalities.



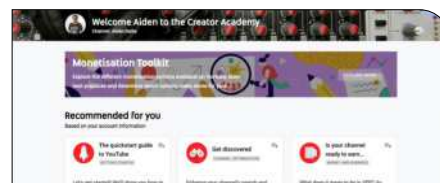
03 Ask for donations

There's no shame in asking for money, so link your channel to a payment service and ask people for a small donation. Always suggest a (modest) amount and thank people.



04 A word from our sponsors

There's no shame in a bit of product placement or sponsorship and it's another way you can bring some money in to fund your quest for YouTube fame.



05 Become a partner

Finally, one of the most obvious ways is by becoming a YouTube partner. This will enable you to attach either videos (ones that play before yours) or a banner display ad.

LIFE HACKS

3 TECHNIQUES TO MAKE ANY PHOTO A MASTERPIECE

Take amazing pictures with any camera

01 FRAME THE SHOT

Composition is the arrangement of the different elements in your photo. It's important to use your judgement to decide what looks best, but there are a few guidelines to help you get it right.

02 ACHIEVE PERFECT EXPOSURE

Exposure determines how bright your photo is. In auto mode, the camera sorts this for you, but if you are going manual, you'll need to balance the aperture, shutter speed and ISO settings.

01 Aperture

A wide aperture (small f-number, eg f2) opens the hole in the lens to let in light for a brighter photo, whereas a narrow aperture (large f-number, eg f22) closes it to let in less light and for a darker image

02 Shutter speed

A slow shutter speed (eg 30 secs) will keep the shutter open for longer when you take a photo, allowing more light to hit your sensor for a bright shot. A fast shutter speed (eg 1/800 secs) will do the opposite

03 ISO

Your ISO value adjusts the sensitivity of your camera's sensor to light. A higher ISO will boost the sensitivity for a brighter shot, but can make your image grainy if you set it too high

01 Keep it simple

Avoid cluttering your photo with lots of different elements, as the viewer won't know where to look first. Try to include no more than three main subjects to keep things nice and simple

02 Leading lines

Look for natural lines in the scene, such as fences, paths or cliffs, that will help guide the viewer's eye through your photo. Make sure they are leading into the frame, not out of it, to keep their attention



“If you are going manual, you’ll need to balance the aperture, shutter speed and ISO settings”

03 The Rule of Thirds

Switch on your camera’s gridlines display setting and place the main subject of your photo over one of the intersecting points and the horizon along one of the horizontal lines for a more balanced image

PICTURE-PERFECT EDITING APPS



Picasa

Google’s intuitive and powerful editing software enables you to not only organise and share your photos, but also edit them with lots of easy-to-use tools.

Price / OS
Free / OS X



Adobe Photoshop Express

Get Photoshop for free on your smartphone or tablet to make easy adjustments with simple sliders.

Price / OS
Free / iOS



PhotoDirector

Make quick edits and add stylish filters and effects to enhance your photos before sharing them with the world online.

Price / OS
Free / Android



03 ENHANCE YOUR PHOTO

If you don’t manage to get your photo quite right, there are plenty of free and paid-for editing apps that will sort out annoying niggles.



01 Fix the exposure

Adjust the brightness of your shot to correct the exposure. You can also control the shadows and highlights to correct any overly bright or dark areas.



02 Boost the colours

Increase the saturation of your photos to make the colours bolder and brighter. Avoid boosting it too far though, as it can make your shot look unnatural.



03 Crop the shot

Cropping lets you compose your photo after it has been taken. Trim the edges of the shot to reposition your subjects within the frame and create a better-looking image.

LIFE HACKS

LEARN A NEW LANGUAGE WITH MEMRISE

Become fluent the easy way with this killer app

How long in total do you think it would take to learn a new language? Tens of hours? Years? Decades? With Memrise, it could take as little as 20 minutes a day to learn five new words, after a month that's 150 words, and by the end of the year you'll be practically a native speaker.

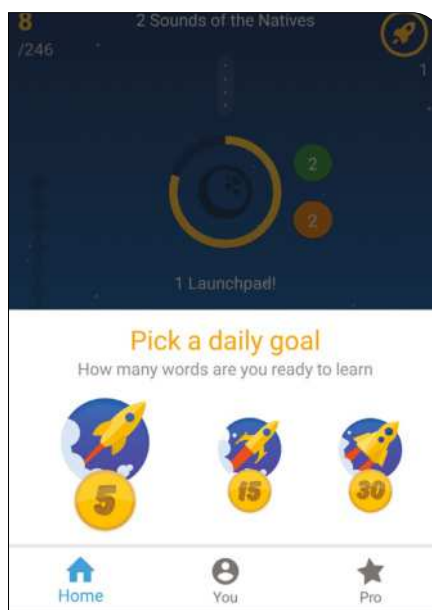
Memrise is a free language-learning platform that through engaging lessons, repetition and regular tests it helps your brain to remember information for longer than if you were to study it. The platform primarily teaches languages, but there are other subjects such as identifying country's flags, multiplications and general trivia. Using the platform is like playing a game, you earn experience points, level up, and there are badges to unlock and leaderboards so you can compare scores with friends. A paid membership on Memrise will let you to access extra learning tools such as listening skills, advanced words and the ability to video chat with native speakers. If you stick with the free membership, though, you can take courses, revise and test yourself. Memrise has a website which has a couple of extra features but none that are essential. We will show you how to make the most of the app and learn a new language before you know it.

“
Memrise has a website which has a couple of extra features
”



01 Find your course

When you start up the app you can choose a language as well as whether you want to start with beginner or skilled, it will then ask you to make an account. If you can't see the language you want to learn in the menus, select any language, go through the beginning couple of questions, then end the lesson and search for a new course by pressing the top left icon and selecting 'Start New Course'.



02 Set your goals

Before you start a new lesson, at the top-right of the screen will be a rocket ship, press this icon and you can select how many new words you wish to learn during that lesson. To go to the settings, press the You tab and then the gear icon. There will be another gear next to 'Daily Reminder' using this, you can set the time you wish to receive notifications.

WHAT MAKES MEMRISE DIFFERENT FROM OTHER LANGUAGE APPS?

Memrise was developed along with a scientific advisory board to help devise the best way to trick your brain into memorising things – using repetition, rest and systematically testing your memory so it stays planted in your head for longer. It's like when you meet someone for the first time and then the next time you forget their name,

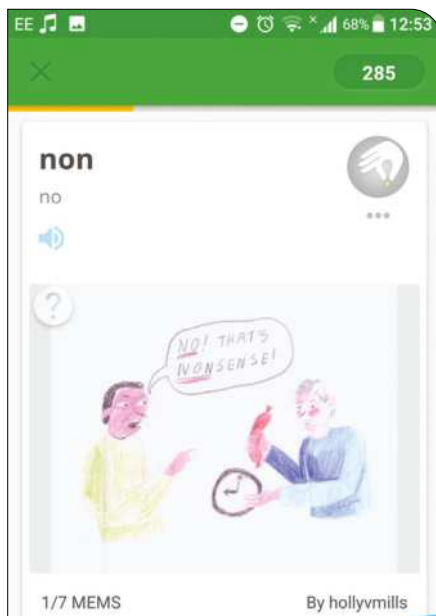
but after multiple interactions with that person your brain eventually retains the information because you regularly have to use it. Memrise is also heavily community based, with the user-made courses and mems, leaderboards and video chats with native speakers, this sense of community motivates you to stick with it.



100 Questions You Simply Must Be Able to Answer

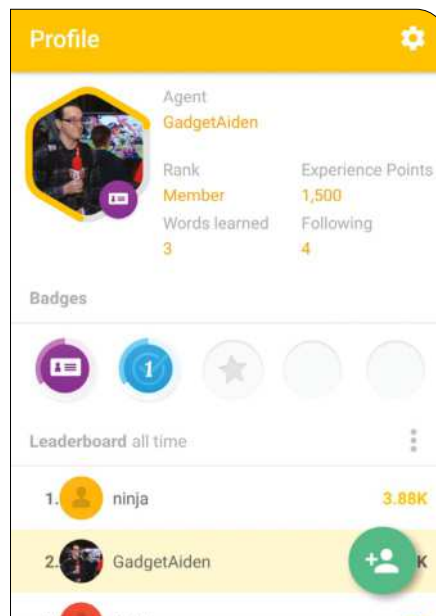
A quiz from Pub Quiz Reference: <http://www.pubquizreference.co.uk/index.shtml>
If you've enjoyed this course check out Now I Know: <http://www.memrise.com/course/342708/now-i-know/>

START LEARNING



03 Mem's the word

There are tips for learning every word shown in each lesson called Mem. These are photos, mnemonics, cartoons or example sentences made by the community. If you have one that you think will help others learn the word you can make one through Memrise's Mem creator but on the app version you can't add images or videos, only text.



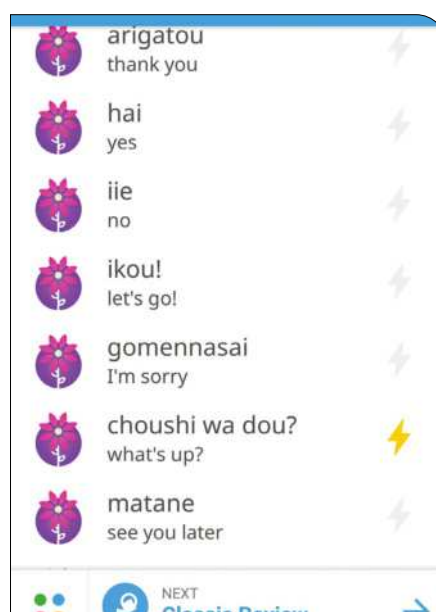
05 Compete with pals

In the You page there is a add button located in the bottom-right corner where you can follow Facebook friends or other users. Once added you can see how many words they've learnt in the week, month or all time. It's not the most competitive system but it gives you or others a goal to reach. Great if you are the competitive type.



04 Get extra credit

In the home screen, press the button with four coloured dots on and you will be given a selection of learning methods and tests, three are available to free members and three are only accessible to paying users. With a free membership you can learn new words, revise ones you've learned, and speed review as well.



06 Stick at it

Remember that the key to learning is repetition and discipline. Don't be disheartened if you stumble and can't remember the odd word or phrase – to review anything specific go to the home menu, click on the planet and it will show all the words you've been taught. Here you can click on them to listen to the word or see any memorisation tricks.

LIFE HACKS

8 HACKS TO GET A FIVE-STAR HOLIDAY FOR LESS

Planning a break? Then you definitely need to read this first

If you haven't booked a holiday yet for this year, then the good news is that you're not too late. Depending on where you're planning on going, not only are there still plenty of options available but you might be just in time to pick up a bargain.

A recent survey by TripAdvisor revealed the best times to book your holiday to ensure you get the best deal, and although they vary to some degree, the good news is that if you book in the last few months before you depart then that seems to be the cheapest time to go.

If you're just looking to book a flight, though, or you prefer the DIY approach and shun the package deals put together by the travel agents, then there are still plenty of ways that you can save money when it comes to booking a trip away.



New York City

2-4 months out for 25% savings

WHEN IS THE BEST TIME TO BOOK?

TripAdvisor analysed the data from people using and booking through its website between April 2014 and February 2016, and what it found was that its users were a savvy bunch that knew the best times of the year to book their holidays – making sure that they got the cheapest possible price.

What was surprising, though, was that the timescale varied greatly from city to city – although most seemed to suggest that booking your holiday in the few months leading up to when you want to go seemed the cheapest way.

It's worth remembering that this is just a guide, and although these are the average figures taken over that 22-month period, there's no guarantee that you'll get exactly the same discount.

Orlando

1-4 months for 10% savings

Cancun

2-4 months for 16% savings

Rio

3-5 months out for 11% savings

Buenos Aires

1-4 months out for 19% savings

01

Search out the best deal

Don't book the first holiday you find, even if you think it looks cheap. Search through as many comparison sites and travel agents as you can be bothered to and you'll probably find it cheaper elsewhere. Sites like Kayak and Momondo are particularly good for finding a good bargain.

02

Timing is everything

Holiday companies whack up their prices at the peak times of the year, so booking a week in Spain is going to be cheaper in February than it is in August. You can save a load of cash if you're prepared to fly at less-popular times, too – for example, flying out on a Wednesday and returning on a Tuesday.

05

The complete package

The DIY holiday approach (where you book flights and accommodation separately) gives you the best choice, but will often work out to be more expensive. If you go to a travel operator then you will be offered a package, which gives you less choice but gives a range of hotels and resorts at a cheaper price.

06

The later the better

Unlike flights where, as we said, it pays to book early, you can pick up a bargain if you're prepared to wait until a couple of months before you're hoping to fly out. This is because tour operators have chartered the planes and reserved the rooms, so they'll lose money if they don't shift them.



Source: tripadvisor.com

03

Where in the world?

Having said that, though, the timing of booking your flight or accommodation does vary depending on exactly where in the world you're heading to. Check out that map above this step for more information on when it's the best time to book your holiday depending on where you're going.

04

The early bird special

You may think you'll get a bargain if you book your flights last-minute, but the opposite is also true. Companies allocate a number of seats at a certain price, so when they're all sold the price goes up. If you know when you're going away, then book the flights as soon as the times are announced.

07

Don't be afraid to haggle

If you're going down the package route, then it's worth contacting a few agents to see how their prices differ. Once you've got a quote from one, try ringing around to see if any would be willing to beat it. With more people booking online, you can be sure that at least one other agent will drop their price.

08

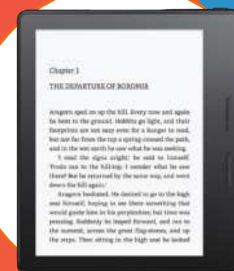
Getting the most from your money

When it comes to changing your money for your holiday it pays to shop around as the rates shops and bureau de changes offer can vary wildly. Also, try not to use ATMs and credit cards abroad, as the exchange rate will not work in your favour.

DON'T FORGET TO PACK...

Kindle Oasis

If you're looking for the latest and best in the world of e-readers then you need to get hold of the Kindle Oasis. Sure it'll set you back around £330, but if you're desperate to effectively read your e-books on the beach then this is the e-reader you need. **£330 | \$360 | amazon.com**



Re-Timer

This uses a soft green light to stimulate the part of the brain responsible for regulating the body clock and can be used at certain times of the day to reprogram your brain into sleeping when you actually need to and beat jet lag. **£150 | \$310 | re-timer.com**



Bluesmart Luggage

Its makers claim that Bluesmart is the world's first 'smart luggage'. It comes complete with location tracking, a digital lock, a distance alert, a built-in scale and even a phone charger. The only noticeable bugbear is the high price. **£350 | \$400 | bluesmart.com**



Olympus OM-D E-M10

We loved the fact that this digital CSC camera has a classic retro design, but its inner workings are bang up to date. The 16.1MP E-M10 features a touchscreen, WiFi, and sensor-shift stabilisation, ensuring that your holiday snaps will be perfect. **£530 | \$650 | olympus.co.uk**



LIFE HACKS

LONG-HAUL FLIGHT HACKS

Make even the lengthiest journey a breeze

When you are facing a lengthy flight, there are certain little helpers that can make your hours in the air a lot more comfortable. The following carry-on kit on these pages will help take (some) of the stress out of flying, with smart and innovative ways to keep your luggage safe, get some sleep and fight jet lag at the same time, as well as keep you entertained when the aircraft cabin fever starts to set in.

Picked by a mix of our own tech and travel experts, these gadgets have been rigorously tested during a 12-hour flight to the States, from London Gatwick to Las Vegas with a layover in scenic Detroit.

As a bonus, we've also included the essential app store picks for both iOS and Android to make the most of before you fly, so you get the best price for your flight and know which seat on your plane is the most comfortable.

“This carry-on kit will help take (some) of the stress out of flying”

Automatic locking

Proximity sensors automatically bolt the luggage if it leaves your side, while the lock is also TSA-compliant for seamless security checks

Digital scale

There's no need to pay at the airport to weigh your bags, this case has its own built-in scales

Location tracking

The case is equipped with 3G cellular data (free of charge) and GPS, so you can pinpoint precisely where it is even if you're out of Bluetooth range

Battery charger

As well as storing 34 litres of luggage, somehow this case manages to squeeze in a 10,400 mAh capacity battery pack. That's enough to charge your phone up to six times

£400 | \$450
bluesmart.com

Bluesmart One

The ultimate carry-on, this smart suitcase is packed with a dazzling array of features, such as a digital scale and location tracking, most of which you control with a free app.





DON'T LOSE YOUR LUGGAGE

If you can't afford the Bluesmart One, the Tile Mate offers the reassurance of location tracking for a fraction of the price. Powered by Bluetooth, it doesn't have quite the same range (even if it can piggy bank its signal off other devices), but is ideal for finding your bags on the luggage carousel.

Tile Mate | £25 | \$25 | thetileapp.com



CURL UP IN COMFORT

Though it may look like everyday loungewear, the Koala Hoodie is the traveller's sartorial Swiss Army knife. Its 15 features include a padded hood for extra comfort with flip-down eye mask; a removable neck pillow; a built-in phone charger; and zip-up pockets for storing your passport.

Koala Hoodie | £110 | \$140 | koalahoodie.com



IMAX-IMISE YOUR IN-FLIGHT MOVIE

Instead of watching films on the tiny monitor built into the seat in front of you, don a VR headset and you can watch movies as if you're getting a private screening in a simulated cinema. The Samsung-branded goggles work with both Galaxy S6 and S7 phones.

Samsung Gear VR | £80 | \$100 | samsung.com



GET RID OF JET LAG

This smart sleep mask uses coloured LEDs and light therapy principles to adjust your biorhythms, so you can fall asleep faster or wake up with an added energy boost. It's Jet Lag Blocker feature can also help adjust your body clock to the timezone of your destination.

Neuroon Intelligent Sleep Mask | £320 | \$300 | neuroon.com



BLOCK OUT EVERYTHING ELSE

Bose's QuietComfort 35s live up to their name, with noise-cancelling tech that measures the noise around you – such as the whirr of the engines or snore of other passengers – then uses an opposite signal to block them out. The noise-cancelling function works even when not playing music.

Bose Quiet Comfort 35 | £330 | \$350 | bose.com



MIX DRINKS AT 35,000FT

Fancy an Old Fashioned or perhaps a G&T? The Carry On Cocktail Kit is a pocket-size tin containing everything you need to whip up a mid-air aperitif, including a recipe card, spoon and ingredients for two drinks. All you have to do is ask the flight attendant for your spirit of choice.

Carry On Cocktail Kit | £20 | \$25 | wandpdesign.com

HIGH-FLYING TRAVEL APPS



Sky Scanner

Got wanderlust, but don't know where to go? Just type 'Everywhere' into the search bar to view low price flights worldwide.

skyscanner.com



Seat Guru

Once you have your flight details, head to Seat Guru to read user reviews and find out which seats have the most legroom or have charging points.

seatguru.com



FlightTrack 5

FlightTrack 5 colour-codes your flights so you can know at a glance if you need to perform a mad sprint to your gate.

mobiata.com



Jet Lag Calculator

This site does some clever maths to work out a sleep schedule that will help adjust your body clock to a new time zone.

bit.ly/2db95Gj

LIFE HACKS

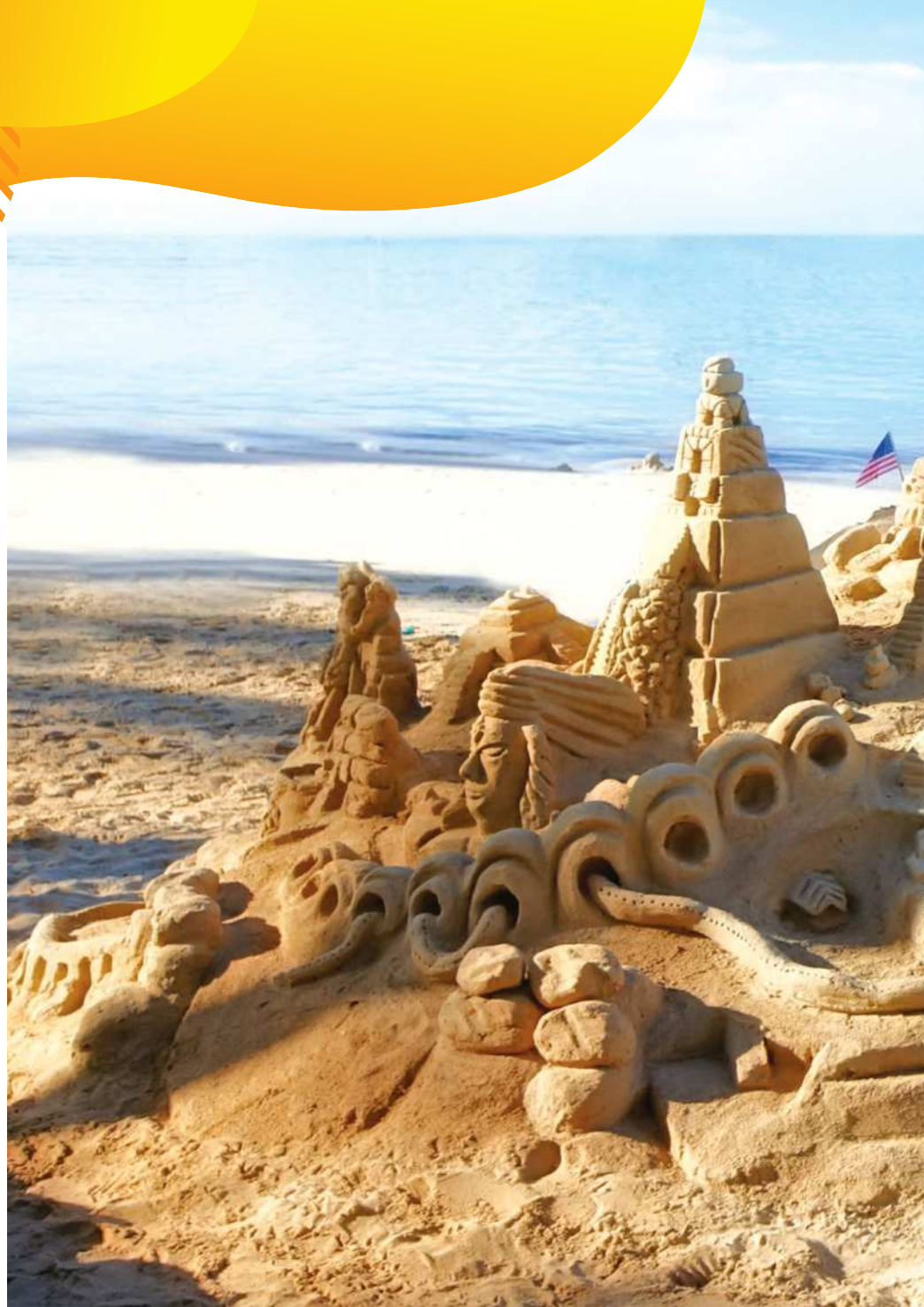
BUILD A SANDCASTLE LIKE A PRO

Liven up that day on the beach by creating your own sand-sculpted masterpiece

Crudely depositing a bucket of sand on the beach and calling it a 'castle,' just doesn't cut it anymore.

The bar has been raised by professional sand architects – with names like 'The Sand Guys' or 'Archisand' – that create enormous and fantastical tableaux out of sand and water. What's more, they are making money doing so. Competitions, such as the U.S. Sandcastle Open in San Diego, offer over \$21,000 in prizes each summer.

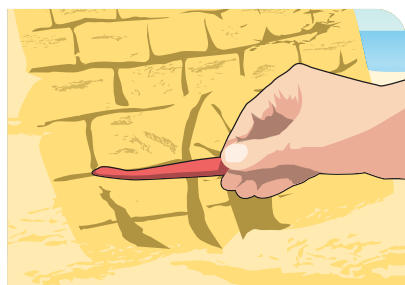
While a certain degree of artistic ability is required to make something that will get you recognised in the world of sand sculpturing, creating something for yourself that looks half-decent is still within the grasp of many of us. You will need tools, though, and the more thought you put into the ones you get, the easier the job will be. And while you might not like the attention you'll draw to yourself by starting up a petrol-powered rammer on the beach (or the £1,800 price tag), you can get started with the bare necessities and just a few pounds of investment too.



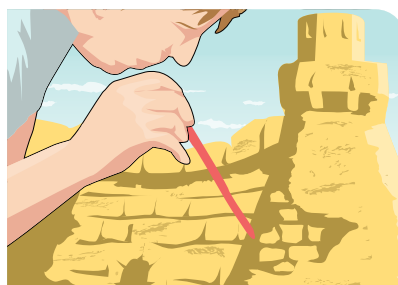
01 Picking the perfect spot The first job is to find the perfect spot on the beach to build your sculpture. You obviously want to do it where there's enough space, and close enough to the waves so that getting up and down the beach with water isn't a massive pain. Also, you'll need to make sure that the sand is the right consistency to build on, try and aim for a spot that's close to where the harder, wetter sand meets the finer stuff.



02 It's all about the base When you've built up your base you're then ready to start forming your structure. In our list of tools we've recommended bringing a couple of buckets with you, and if you cut the bottom out of one of them then it makes the perfect tool for building towers. You can fill up the bucket (making sure the sand is damp enough to keep the structure's shape, and then simply lift the bucket off of it.



03 Adding the detail Once you're happy with the shape then it's time to add detail, and that's when your tools will come in handy. You can use the wider ones for shaping and smoothing the edges (and making pathways) and then the smaller ones are ideal for adding brickwork, patterns and doorways. Don't worry if you make a mistake, you can use sand to retouch imperfections or use the brush to sweep the error away.



04 Neat and tidy As you're cutting into the sand you'll notice that a lot will be falling out, collecting at the edges and making everything a little messy, and that's where the tubing comes in. The sand should be light enough to be blown out of the way with ease. If you need anything for more stubborn removals, though, or just need to smarten up some of the edges, then the brush is perfect for that.

TOOLS OF THE TRADE

No sand artist's tool kit would be complete without these essentials. Usually they paint their tools all in bright colours, too. Why? So that they can easily find them if you drop them in the sand, obviously.

Aqua2Go Water Sprayer

If you want your sandcastle to last more than a few minutes then you're going to have to keep it wet. So you can use this sprayer to lightly douse your masterpiece and 'glue' it together.

£110 | \$160 | aqua2go.eu/en



Belle RTX Rammer

If you have oodles of money and are determined to become a pro then you might want to invest in a rammer, as the more compact you make the damp sand, the more likely it'll all stay in one place.

£1,800 | \$2,600 | bellegroup.com



Three gallon bucket

If you invest in a sprayer, you're still going to need a lot of water, so make sure you've got a supply of high-quality buckets to hand. You want heavy-duty builders' buckets at 14 litres (three gallons) each.

£15 | \$20 | screwfix.com



Palette knives

When you want to add some detail to your work then that's when a palette knife will come in handy. If you've often pondered on how sculptors make such intricate designs, well, it's by using these.

£5 | \$10 | anself.com



One-inch paintbrush

If you make a (small) mistake then the easiest way to cover it up is with a standard paint brush, like you do with painting. Lightly dust the area you want to cover up and your error will disappear before your eyes.

£5 | \$10 | farrow-ball.com



Melon baller

You can scoop out circles from your sculpture with a small spoon, sure, but a much neater, easier and mess-free way of doing it is with a humble, yet surprisingly accurate, melon baller.

£3 | \$5 | amazon.com



Surgical tubing

Straws work fine too, but all the pros use surgical tubing to gently blow away any loose sand from their designs. The extra length lets you get into hard-to-reach areas.

£6 | \$8 | amazon.com



LIFE HACKS

STAND UP ON A SURFBOARD

The surf's up, and soon you'll be too

There's nothing cooler than picking the perfect wave and hitting it just at the right point to stand up and confidently ride it to all the way to the shore. On the other hand, there's nothing less cool than wiping out in the shallow white water while kids around you are zipping about on body boards.

The solution? Well, it's simple: learn to surf like a pro, and it'll be no time at all before you're popping up on the board and cooler than a particularly chilly cucumber. Just follow our handy guide...



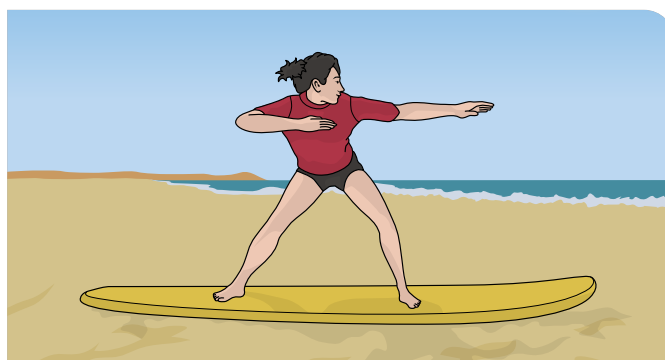
01 Natural or goofy?

Before you even think about stepping on to a surfboard it's important to distinguish whether you have a natural stance (where you lead with your left foot) or a goofy one (where you lead with your right foot). This all depends if you're left-footed or right-footed. To work out which one you are, close your eyes and get a friend (that you trust, obviously) to gently push you from behind. The foot that you first put forward to steady yourself is the one that you are going to lead with.



03 Getting out there

When you've practiced enough and feel confident to give surfing a proper go, it's time to take your board out into the water. Once you are in the water, lay on your board and start paddling until you're just past the point where the waves break. It's important that you're comfortable on your board, so keep your weight centred in the middle of the board to minimise resistance – ideally, the nose of the board should be no more than two inches out of the water.



02 Top of the pops

The 'pop up' move is the one that takes you from the paddling position to being upright and on your feet. It's a little difficult to get down properly and we recommend you practice it on the beach instead of going head-first into the water and embarrassing yourself. The trick is to get up on your feet as quickly and smoothly as possible – and getting the correct foot position is essential, with your back foot positioned near the tail and the front one resting just above the midpoint of the board.



04 Aim for the sweet spot

Turn your board around until you're facing towards the beach and then, when you see a wave coming behind you, paddle quickly so that you 'meet' it, matching its speed. You're aiming for the sweet moment just before the wave begins to roll over and break (You'll soon learn what this feels like and when to go). You'll feel the wave lift the board, and that's your cue to start that pop up move that you've practiced a hundred times on the beach.

“There’s nothing less cool than wiping out in the shallow white water”



SUPERCARGE YOUR SURF

SurfEars 3.0

These earplugs keep water out of your ears while allowing sound in. It comes with multiple parts so you can find the size that most comfortable fit. SurfEars' optional leash can help prevent lost buds and it all comes in a handy case.

£50 | \$50 | surfears.com



GoPro Hero 8

If you're serious about surfing then you really need a GoPro camera – and the Hero 8, while not the newest model, is the best in terms of value. You can attach it to either yourself or the board and record your complete surfing session. It can film in up to 4K resolution and is waterproof up to 33 feet.

£280 | \$280 | shop.gopro.com



Nixon High Tide

The High Tide provides you with data on the tides, wave height, swell direction, wind direction and speed – even water and air temperatures. Made using recycled plastic, the watch's body is incredibly resilient and still comfortable.

£190 | \$200 | nixon.com



05 Stand up slowly

When you first pop up, bring your feet into position as quickly as possible, but keep your legs in a crouched position. Now you're free to stand up slowly and put your arms out straight to give you balance. It'll take time to get the knack of it, so practise the basics in the shallower white water nearer the beach. Once you've achieved standing up, stay crouched, shift your weight to your front foot and ride that wave to shore!

LIFE HACKS

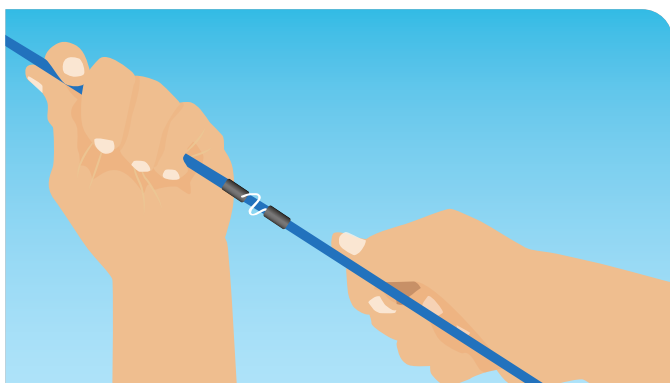
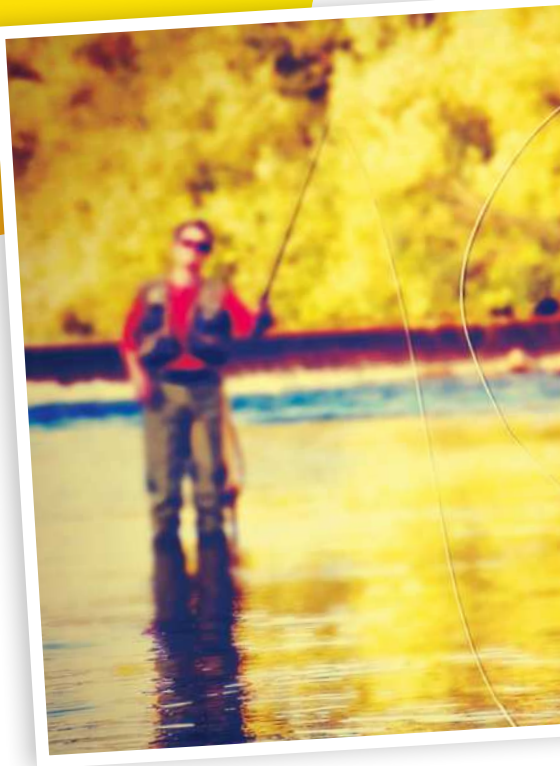
HOW TO CAST A FLY LINE

Hit the sweet spot every time with our super-fly guide

With spring on the way, thoughts turn to lazy warm days sat by the side of a still lake, enjoying the peace and tranquillity of a day's fishing. Before you get your rod and tackle out of mothballs though, it might be worth spending a bit of time boning up on the essentials.

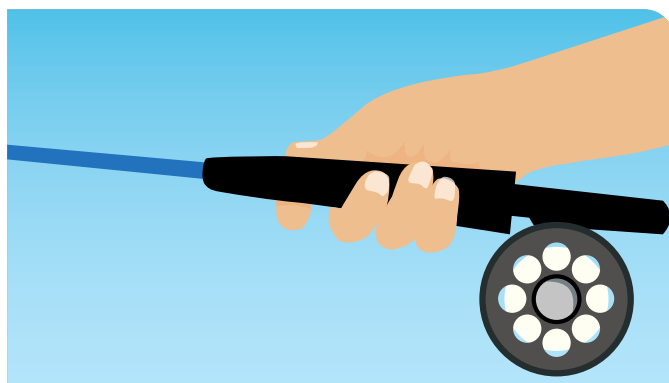
It might not seem important, but picking the right line for your style of fishing can make a huge difference to the amount of fish you're able to catch. And, let's be honest, we could all do with a bit of help perfecting our swing when it comes to casting.

This workshop will help you to perfect your line-casting skills, so that when you come to casting your line, you hit the sweet spot every time. We also give you a breakdown of the essential knots you'll need, and even an anatomy of the line itself – to ensure that you're packing exactly the right type of line for your style of fishing. Let's go fish!



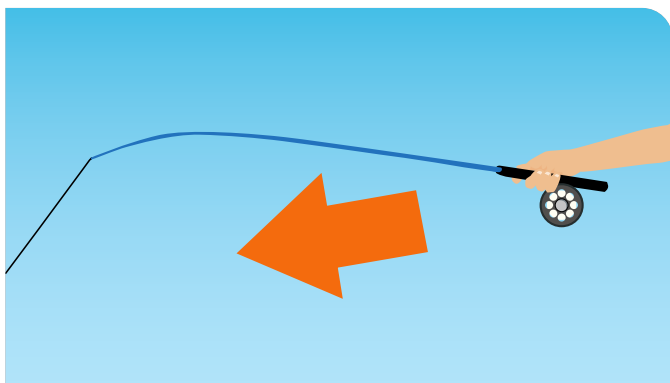
01 Setting up the perfect load

To begin your perfect casting of a fly line, you need to make sure that it's perfectly set up to get the correct 'load' when you finish the back-cast. The more line you let out of the rod, the more you'll add to the load. The amount of line you should let out varies on the length of your fishing rod and its weight, but a good rule of thumb is that you should let out enough line to equal three lengths of your rod.



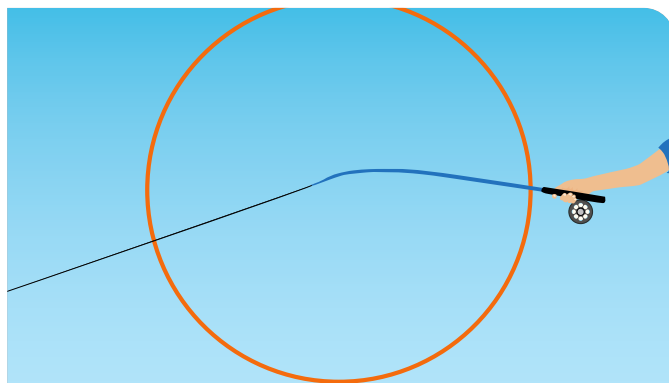
02 It's all in the grip

Next, you need to work on your grip. The ideal way to hold your fishing rod is with a grip like you're shaking someone's hand – not too tight, as the casting motion requires a fluid movement, but firm enough to make sure the rod doesn't fly out of your hand! It's worth practicing this with an unstrung rod so that you get a feel for how this should work, before you try to cast off for real.



03 Time to cast

Now you're ready to begin your cast, and there are three main ways to do it: sidearm, 45-degree or overhead, so it's best to experiment to find which one feels the most comfortable to you. Keep your wrist stiff, so you get the power from your forearm, and your elbow close to your side. Pull the rod back to a 10 o'clock position, only bending your elbow.



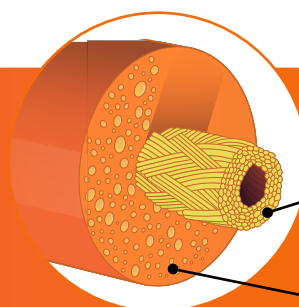
04 Waiting for the fly line

When the fly line fully leaves the surface of the water, pause to allow the momentum of the movement to travel through the line. How long this will take depends on the amount of line you have and the load on your rod. Wait for the fly line to unfurl almost completely so that the leader is nearly fully extended before beginning your forward cast.



ANATOMY OF A LINE

If you're new to fly fishing, then you might not know the differences between the many varieties of fly lines available. It's important, though, as the line you choose has an impact on the type of fishing you can do – floating fly lines are lighter, while sinking ones have a denser outer coating to allow them to go below the surface of the water. Here's a breakdown of the elements you'll find in a fly line, with a guide to helping you pick the right line for the fishing you'd like to do.



The Core

The core varies in size, and it's braided to give the line its strength. Shop around to find a line that's perfect for the fishing you want to do

Inner layer

The inner layer can vary in diameter depending on the type of line you're using. A double taper line is usually symmetrical, with an even width, while a weight forward line has a thick and thin part and different front and back ends

Outer layer

The outer layer is always made from plastic, and it's this that determines whether the line will either float or sink

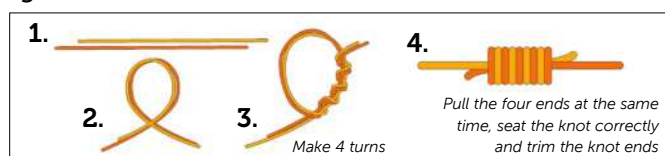
THE KNOTS YOU NEED TO KNOW

There's a multitude of knots to help you when you're fishing, but here are four of the most essential



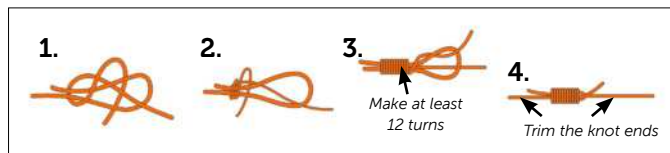
Arbor knot

The arbor knot is a simple knot that's perfect for tying your fishing line to the spool of any reel – a fly reel, bait casting reel or a spinning one. Despite its ease to do, the arbor knot is deceptively strong, and could only possibly break if a fish manages to take all your line down to the spool.



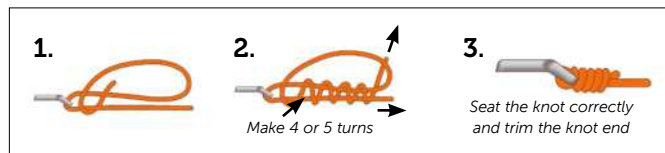
Water knot

This is an extremely strong fishing knot that is designed to join two lines of any size and strength together. The water knot is also very small too, so it's definitely the preferred knot for when you need to thread the bait past the eye of the hook.



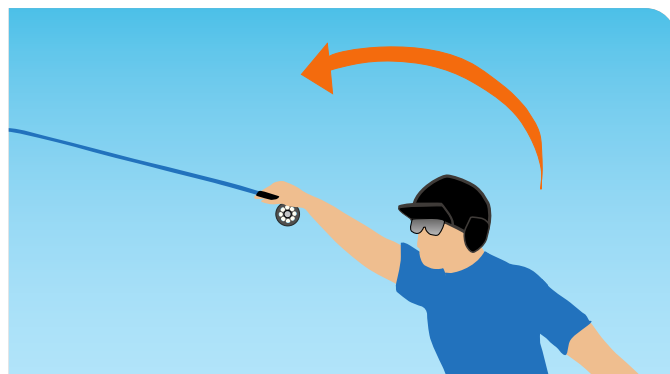
Albright knot

The albright knot has a wide range of uses, and although it can be a bit tricky to tie, it's another one that's ideal for joining different types of fishing line – for example, monofilament to braided, or braided to wire. Normally, it's used to join the backing line to the fly line.



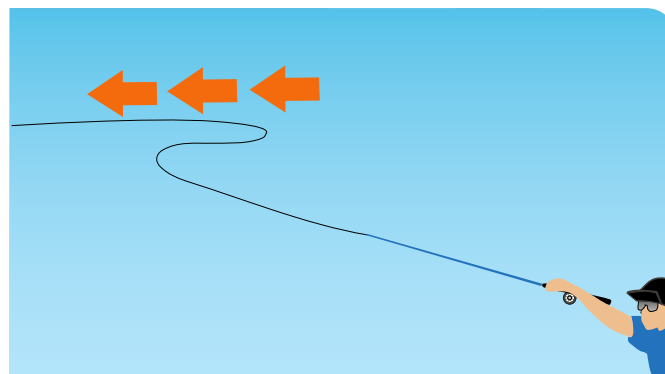
Uni-knot

Also known as the grinner knot (or the Duncan loop, after Norman Duncan, the man who created it), the uni-knot is one of the most common used in fishing. Not only can you use it to attach the fishing line to the arbor, you can also use it to join lines or attach lures, snaps or swivels.



05 Stand up slowly

Now's the time to launch your forward cast. Move your arm forward in a straight line towards where you want your line to land on the water's surface. You should make sure the movement is relaxed, but sharp. As with the back cast, it's important to keep the movement straight for accuracy.



06 Final flourish

To finish your cast, stop while the tip of the rod is still pointing upwards slightly – the momentum will continue with the line and stop it falling short. Ideally, you want to stop your cast at around the 2 o'clock position. If you get this right, your line should cast out cleanly and then pretty much come to a stop almost exactly where you aimed for.

LIFE HACKS

THE RIGHT WAY TO PUT UP A TENT

Top tips that will make sure you'll always be a happy camper

Camping isn't so bad, right? A few nights away from it all, getting in touch with nature and living the simple life – does that sound nice? Well, yes, in theory it can be a lovely experience, but that small bag containing a baffling collection of fabric, loops, ties and telescopic poles may in fact be a temporary home for a while, but the stress of putting the tent up could make you wish that you had headed to a hotel instead.

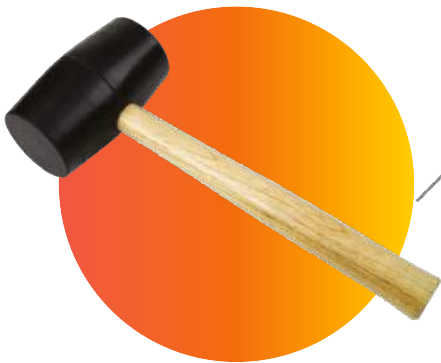
Fear not, though, for as long as you've packed this bookazine on your camping trip (and why wouldn't you?), you will have

the tent up and the tea brewing in minutes, as we've done all the groundwork for you and added a smattering of patience and know-how to help make this process less like a nightmare.

As with seemingly everything, a little bit of common sense goes a long way. As long as you've remembered all the kit (double-check everything is in your tent bag before you march off into the wilderness), pick the right spot and take your time then you're almost guaranteed the perfect tenting holiday with no frustration whatsoever. Well... we can't help with the weather.

01 Location, location, location

The first thing to do is pick the perfect spot for your tent. If you've got an allocated plot on a campsite, then it should already be sheltered and flat, but if not, make sure you get a spot that's as level as possible, sheltered from the wind – next to a hedge is always a good idea – and with no trees or power lines overhead. If the spot is exposed, try to make sure you have the wind behind you so that it doesn't blow through the tent, and always pitch it at least ten metres away from any open fires or barbecues to avoid any stray sparks landing on the tent's material.



02 Get yourself organised

So you've picked the perfect spot; now it's time to get the tent up. Unpack everything and ensure everything you need is there before you start. Apart from the tent itself, you should also have a small rubber mallet (you can grab one for around £2 at Halfords) to knock in the tent pegs. Unless you have a particularly fancy or unusual tent, it's safe to assume that you have a number of poles (probably of different sizes), an inner canvas and an outer one (or flysheet) to go over the top of it.

03 Lay out the poles

Now fix together all of the poles and then lay out the inner canvas on the spot you'd like to camp, taking care that the entrance is facing the correct way. Following the instructions that came with the tent (and don't panic if you think you've lost them, as they're often attached to the inside of the tent bag) begin to thread through the first of the poles. They usually go from corner to opposite corner, and there will be several small sleeves along the top of the inner canvas to feed the poles through.



04 Starting to take shape

With a pole already threaded through, connect each end of it to the eyelets in the corners and then you're ready to insert the next one. This will be harder, as the bent shape of the first pole will do its best to get in your way. Take this stage slowly. Carefully thread the pole through the sleeves and try not to pull the pole at any point, or it's likely to come apart under the sleeve – and it's a nightmare to try and then connect it back up. Once through, insert the pole into the other two eyelets, and you should then have a basic tent shape.



£690 | \$670
thenorthface.com

The North Face VE 25

This three-person yurt has reflective guylines and glow-in-the-dark zippers to make it easy to find in the dark. Designed for the adventurous, it can even survive sub-zero Mount Everest conditions.



05 Off the peg

Throw the flysheet over the tent and make sure that the seams of both parts match up. You'll need to attach the flysheet by either ties or clips – either will be attached to the inside of the flysheet, so go around each seam connecting the two parts of the tent. Now peg out the corners of the entire tent, pulling the peg loops tight so that the shape is rigid and the flysheet isn't touching the inner tent – you'll get condensation in the morning if you do. Pegs should be driven in at roughly 45° pointing in towards the tent in order to stop them becoming unhooked if there's a wind.



06 Finishing touches

Now, finish off by going around the tent pegging out any loops along the sides. When it comes to the door of the tent, make sure that the zips are all the way down, otherwise you might find that the fabric is too tight to close them afterwards if you don't. The coloured guy lines are there for extra security in high winds, and you can adjust their length by moving the plastic runner up and down the ropes – if you start with it around one third of the way up from the ground, then that will help to avoid people tripping over them.



CAMPING MUST-HAVES

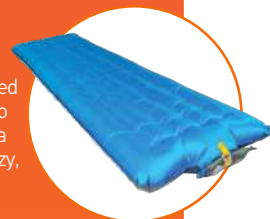
Cinch Pop-up Tent

Possibly the coolest tent you'd ever own. It pops up in just a few seconds and comes with LED lighting and tent pegs, light-reflective guy ropes and even a solar pack to charge your phone or tablet. £150 | \$195 | cinchpopuptents.co.uk



AirPad 2+

Take (some) of the stress out of camping with this ingenious air mattress. Thanks to a cleverly designed valve system, it's possible to inflate the AirPad with just a few puffs of air. Sounds crazy, but it actually works. £75 | \$100 windcatchergear.com



Scrubba Portable Washing Machine

Bet you didn't think you'd be able to take a washing machine with you. Drop your clothes, water and detergent in and, using a neat internal washboard, your clothes could be clean in just 30 seconds. £35 | \$55 thescrubba.com



IceMule Cooler

This ten-litre cooler will keep anything nice and chilled for you for up to 24 hours. Just drop in the ice and you can store anything from food to drinks – it's handy for perishables. It's a backpack, too, so you can easily take it out with you. £40 | \$50 icemulecooler.com



BioLite PowerLight Bundle

This bundle gives you a standard lantern or torch, but it can also be used to charge up your phone, and comes complete with a pair of daisy-chain lights for overhead lighting. £85 | \$110 bioliteenergy.com



LIFE HACKS

CHOP WOOD LIKE A CHAMP

Get pro tips from a competitive lumberjack

Maybe we've watched too many horror movies, by the whirring blades of a chainsaw can be pretty intimidating. Looking to chop fire wood for this winter without losing a limb, we spoke with Spike Milton, Britain's most experienced timbersport competitor. Milton has been in the forestry industry his whole life and has taken part in several STIHL Timbersports World Championships. We spoke to him after a competition took place in Stuttgart, Germany, and around 6,000 people attended to see 22 teams from around the world compete. Milton's first rule for any aspiring lumberjack is, "You must get the proper training, even if you're doing it just as a hobby. Each model chainsaw is different, so before you use a new one read the manual. And make sure you have the proper protective equipment, even timbersport competitors wear the gear. Also, if you are buying a chainsaw just for occasional use, don't get a competition-grade model. That would be like jumping into a Ferrari as soon as you pass your driving test." Here's Milton's top tips for chopping wood like a champ.

Economical engine

The MS180 uses 20 percent less fuel than other STIHL models in the same performance class and its emissions have been reduced



No bad vibrations

The MS180 has an anti-vibration system to reduce oscillations from the engine to the handles, making the job easier on your hands

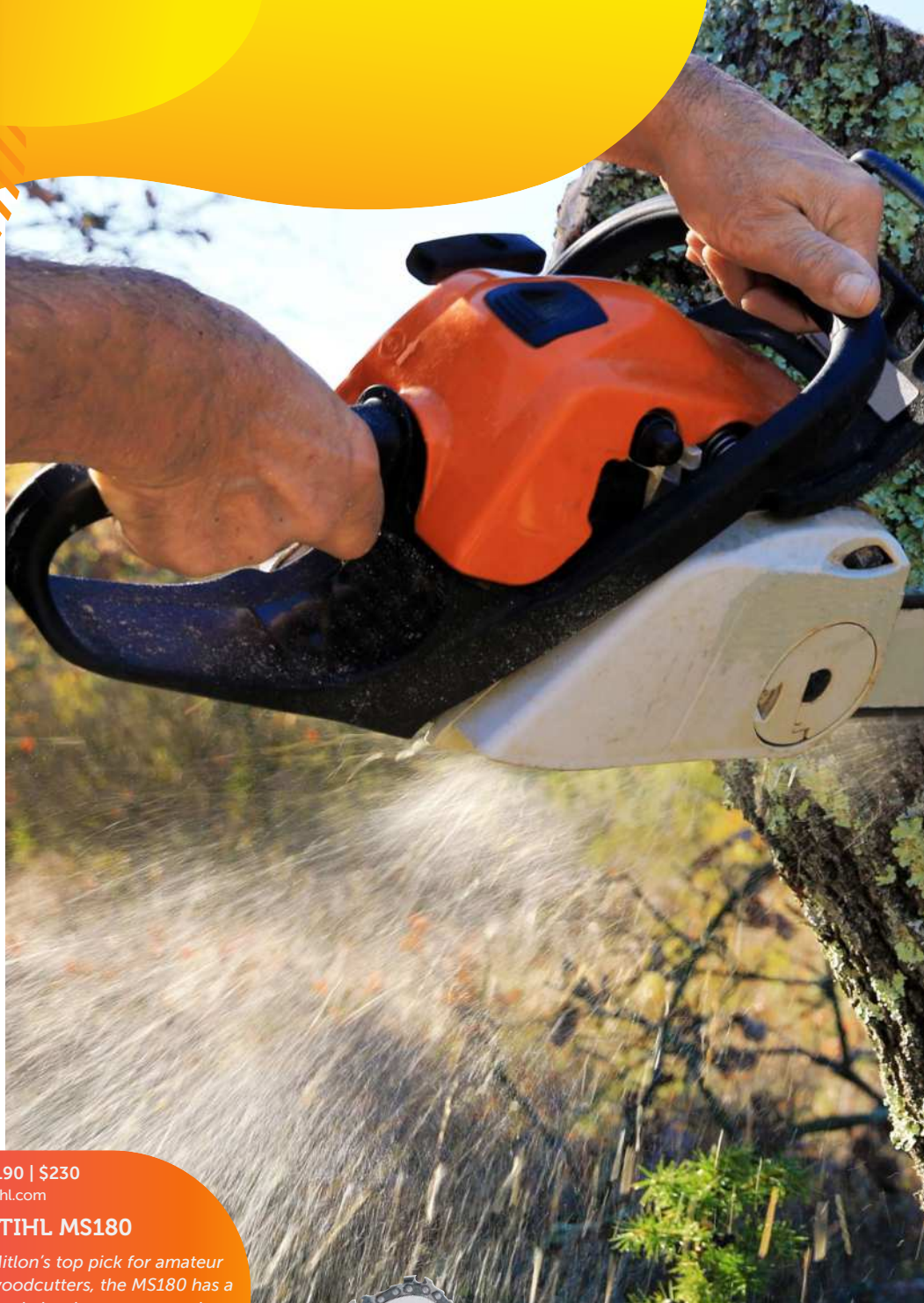
Light for its kind

Petrol chainsaws tend to weigh considerably more than the wired models but the MS180 is light, weighing only 4kg

£190 | \$230
stihl.com

STIHL MS180

Milton's top pick for amateur woodcutters, the MS180 has a single level master control so all the essential functions are easy to access and it's simple to maintain.



01 Inspect the workspace

"Have a partner with you before you do any kind of chainsaw work, as you never know what could happen," Milton says. You need to ensure that the workspace you will be cutting in has no obstacles that could get in your way. If you are cutting a piece of timber, place the wood on a secure, flat surface to prevent it from moving. Always start the chainsaw while it is on the floor, the chain itself should not touch the ground as this couldn't cause blunting.



WHAT ARE 'TIMBERSPORTS'?

01 Underhand chop

Competitors stand on top of a trunk and have to cut through it by chopping at both sides with an axe.

Wood chopped: 13-inch thick White Pine

02 Stock saw

All woodcutters use a STIHL MS661. They must cut two disks of wood, one downwards and one upwards, each within a four inch mark.

Wood chopped: 16-inch thick white pine

03 Standing clock chop

Using an axe, contestants must cut through a vertical block of wood by chopping at both sides.

Wood chopped: 12-inch thick white pine

04 Single buck

One person must cut through a piece of wood using a two-person, six-foot long cross-cutting buck saw, all on their own.

Wood chopped: 19-inch thick white pine

05 Springboard chop

Contestants climb a nine-foot high pole by cutting gaps and inserting boards to reach the top and cut down the peak of the pole.

Wood chopped: 11-inch white pine

06 Hot saw

Similar to the stock saw event, except motorbike engines power the chainsaws. Contestants must cut three disks inside a space of six inches.

Wood chopped: 19-inch white pine



02 Starting the engine

Hold onto the top handle with one hand and have one foot through the rear handle to keep it stable. Engage the chain brake and put the master control into the full choke position. Pull the starter rope slowly until you feel resistant and then pull hard upwards. You will have to pull the rope a number of times before it starts. At the end of each pull do not release the rope, guide it back to the chainsaw so it doesn't get damaged.



03 Warming up the saw

After a few pulls you will hear it make a noise like a burp, flip the master switch to warm-up and then pull the rope a couple more times until it starts. Once it has started gently squeeze the throttle. Once it is fired up you can lift it, but never lift a chainsaw above shoulder height. Accelerate the chainsaw a few times to warm it up. "Put one leg forward and plant both feet on the ground, keeping a strong centre of gravity," Milton adds.



04 Cutting wood and stopping

"When you are cutting make sure the chainsaw stays straight and use the bar of chainsaw, not the tip," says Milton. "Be patient, don't try to rush the job by putting pressure on the saw and don't tilt it back and forth, the chainsaw should be doing all the work." To stop the chainsaw first engage the chain brake with your wrist and flip the switch to the off position with your thumb, keeping both hands on the chainsaw at all times.

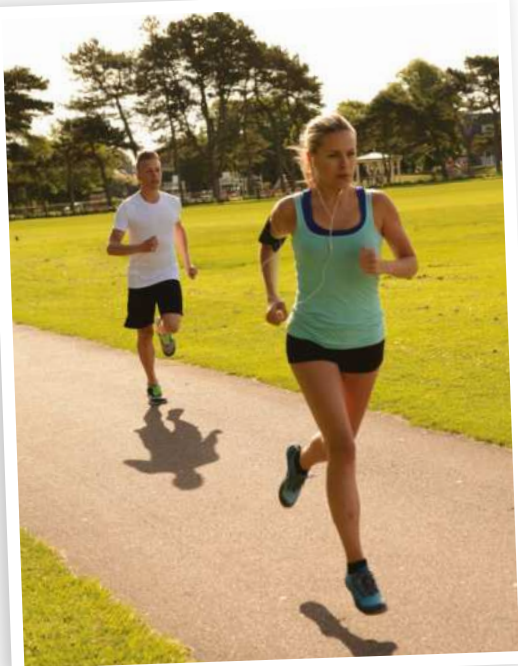
LIFE HACKS

8 WAYS TO SURVIVE YOUR FIRST MARATHON

Beat your personal best with these tips and accessories

Taking on a marathon is no easy feat – it requires months of training and will push your body to the limit. Thankfully, gadgets have made the whole process a little less painful over the last few years. From gizmos that help you train more efficiently to accessories that make the 26 miles feel that little bit shorter, tooling up before you head out on a run can be the difference between making it to the finishing line and collapsing half way through.

Preparation is everything when it comes to running such long distances, so we've got some top tips for the future winners out there – including training techniques and helpful advice for the big day. We've even gathered together a few of the best gadgets that you can use to get ready for a marathon and ensure that you get to the finish line in your personal best time.



01

Get the right shoes

Choosing the right footwear is essential if you want to succeed. You need something lightweight, but with good support. Wear your chosen trainers on at least one ten-mile training run at marathon pace before the final race – that's the only way to work out whether you're going to develop blisters.

02

Don't forget to hydrate

Drinking while you run is vital, and energy drinks are much better than water as they provide fluid, carbohydrates and electrolytes. Work out where the refuelling stations on your marathon will be, and when you're practicing only take on liquid at those points to prepare for the final race.

05

Prepare for chafing

When you're running for hours, chafing is inevitable. Do at least one long practice run in all your gear, and see which areas are worst affected. Some running lubricant (or new shorts) can help with thigh chafing, while a couple of plasters can stop chest-based problems from occurring.

06

Don't ignore the warm-up

Walk or jog gently around for the half hour before the race starts, and stretch gently. You don't want to overdo it and use up the energy stored in your muscles, so keep it light, but don't forego warming up entirely. Concentrate on stretching your calves, hamstrings and lower back.



FACTS AND FIGURES

42,195

The length of a marathon in metres

3rd

The fastest mile of the London Marathon with an average time of 8:05

239

Most marathons run by one man in one year (Larry Macon, USA)

38,000

Number of people who took part in the London Marathon 2015

5,585

Number of people who skated the Berlin Marathon in 2015

GEAR UP FOR THE MARATHON



Fitbit Charge HR

An activity and heart rate monitor, with the added bonus of being able to track your sleep and notify you of any incoming phone calls.

£120 | \$150 | fitbit.com



Jabra Sport Pulse

Wireless Bluetooth headphones that offer an in-ear heart rate monitor, plus full sweat and dust resistance. Jabra claims they won't fall out, either.

£200 | \$200 | jabra.co.uk



Techknit Cooling Towel

These towels use a unique capillary system to spread moisture and perspiration throughout the fabric, while a quick shake of the towel evaporates water and cools it rapidly.

£17.50 | \$18 | missionathletecare.com



OOFOS Recovery Sandals

These sandals absorb shock thanks to a new type of foam, giving your feet, knees and back a break from the impact of running while providing excellent arch support.

£40 | \$45 | oofos.com

03

Wear the right clothes

If you're running for a charity, you may want to run in a t-shirt they provide. As wonderful as the charity may be, you'll be much better off wearing proper running gear made of nylon or similar materials. They'll absorb sweat and regulate your temperature far better than cotton.

04

Don't push it during training

With a week to go until the marathon you might feel like you're in great shape and be tempted to push yourself in training. Don't do it! Stick to the level of training you've become used to, and have confidence in your own fitness. Maintaining your pace will give you the best results.

07

Drink early and often

When running, your thirst mechanism won't keep up with your body's needs, so take on liquid at the first refuelling station even if you don't feel like you need it. Drinking at every aid station will help postpone serious dehydration later, meaning you'll be more likely to maintain your pace.

08

Get your head in the game

You might have trained for months and bought all the best equipment, but your mindset has to be right. Play games in your head, like counting every three miles as a 'lap' to help the whole course feel shorter. Most importantly though, stick to your pacing and don't get carried away.

Is a hammer up to the job?

So you've finally realised that instant coffee is disgusting and that the 'fresh' stuff you get is far from the brew you get from your local coffee shop.

You've decided that it's now time to grind your own coffee beans. But it's not quite as straightforward as you think: high-tech grinders have loads of settings – turning your beans into anything from gravel to powder depending on the level you set.

Before you go investing a load of money in a new grinder and start pounding the life out of every coffee bean that's crazy enough to come within a five-mile radius of you, though, it's worth spending some time looking into what you want your grinder to do, and the sort of coffee you like to drink.

If you really fancy the DIY approach, then we've got a range of options for you to grind coffee beans without all the expense and hassle of having to get a grinder. With a bit of practice and a smattering of patience you'll soon be making coffee that tastes infinitely better than anything from one of the chains.



METHOD
01



GO MEDIEVAL WITH A PESTLE AND MORTAR

There's a possibility that you may have a mortar and pestle lurking in the back on one of your kitchen cupboards, and that would be ideal for the job. Ideal, but tricky, as the round, smooth surface of the bean makes them tricky to crush. The best method is to start with a small amount of beans, crush them and then swap them for a few more. The more you practice your technique, then the easier this method gets.

Did this method work? Yes

METHOD
02



STICK YOUR BEANS IN A BLENDER

It seems obvious that a device used for blending things would be perfect for grinding up coffee, but in reality it doesn't actually work that well at all. Firstly, the granules produced from blender-ground coffee beans will end up being different sizes – no matter how long you grind them for. That's important because an inconsistent grind will affect both the flavour and caffeine extraction of the beans. It's on the right track, but not quite the whole ticket. **Did this method work?** No

10. Did this method work? No

OR IF YOU JUST CAN'T WAIT FOR YOUR COFFEE FIX...



Hario Hand Coffee Grinder

To those of you that are after a traditional look to their coffee grinders, you will no doubt find plenty to love in this modestly-priced bestselling model.

£25 | £30 | hario.co.uk



Baratza Encore

At the other end of the pricing spectrum you have the stunning Baratza Encore. Complete with a whopping 40 individual grind settings, it should cater for all of your grinding needs.

£155 | \$130 | baratza.com



Krups Twin Coffee Mill

You can also get an electric coffee grinder for under £20, too. Don't expect it to have the features of the expensive models, but if you just need a cheap and simple tool for the job then this one's hard to beat.

£20 | £25 | krups.co.uk



IT'S HAMMER TIME

One of the easiest ways to smash your coffee beans to smithereens is using a nice, weighty object – we recommend a hammer or meat-tenderising mallet. Put the beans into a thick freezer bag (anything too thin will simply rip when you start to hammer it) and hammer them with short, even strokes. While this is an easy method, it's also very hard to get a consistent size of ground beans so your coffee's taste will, unfortunately, suffer as a result of this.

Did this method work? Sort of



GENTLY DOES IT WITH A ROLLING PIN

If you're looking for symmetry in the size of your crushed coffee beans, then we recommend putting your hammer away for now in favour of a rolling pin. Put the beans in a tough freezer bag, so that they won't fly all over the place, then roll over the beans with just enough pressure to break them. If you don't have a rolling pin to hand, then you can substitute it with any other cylindrical object that won't break under pressure.

Did this method work? Yes

THE GRIND IS REAL

You might think making coffee is just a case of blitzing some beans and sticking them in hot water, but getting your grind wrong can leave a bitter taste in your mouth – literally. The finer you grind beans, the larger surface area they will have in water, meaning the less time you want to steep them to avoid overloading the flavour. Read on to discover the best type of grind to use in your preferred cup of Joe.

Coarse grind

Your cafetière (or French press) steeps coffee in water for several minutes before straining out the grounds, so the grind needs to be very coarse or the end result will taste very bitter.

Medium grind

This is the kind of coffee you'll mostly be used to drinking in cafes as its used in a drip brew. Made in large batches with contact time dictated by a small hole in the bottom of the brewing basket, the grind needs to look like table salt.

Fine grind

Your morning espresso is brewed by using pressure to force water through compacted coffee grounds. The contact time is very short, requiring a fine grind size.

Extra fine grind

Beans ground like flour have a much larger surface area, meaning the taste is much stronger. An essential part of a Turkish coffee.



Bodum Bistro

This cool grinder from Bodum comes in a range of colours and also has a built-in timer for when you want to make sure you grind exactly the right amount of beans. **£110 | \$145 | bodum.com**



Sage Smart Grinder Pro

If you want to take the techno route, then this is the baby for you. It ain't cheap, but it comes with an LED display, 60 settings and high-precision burr calibration. **£200 | \$N/A | sageappliances.co.uk**

LIFE HACKS

MAKE THE PERFECT SMOOTHIE

Looking to make a delicious and healthy breakfast?

Everyone likes to think they are healthy, but the NutriBullet is selling itself as the cheat to maintaining a good diet. So how do you make the perfect smoothie? And really, what's so different about the NutriBullet anyway?

There's no shortage of blenders, juicers and processors on the market, but the secret to the NutriBullet's success is the powerful motor that's tucked away in its base. With 600 watts of power and a blade that rotates at up to 20,000 RPM,

the NutriBullet is able to break down fruit, vegetables and even nuts in seconds. And you can throw in skins too, as this is often the area of the fruit that holds the most nutrition. So being able to add in absolutely anything healthy to your smoothie is a feature that plays right into the NutriBullet's hands.

The kit comes with a handy booklet that's full of delicious recipes too, so you really won't have any excuses for not trying to be healthy and get that balanced diet.

“What's so different about the NutriBullet anyway?”

£75 | \$70
buynutribullet.co.uk

NutriBullet

Stylish and powerful, the NutriBullet is the perfect kitchen item for all smoothie lovers out there. It completely breaks down ingredients to make a pulp-free and very healthy drink.

Two types of blades

The NutriBullet pack comes with two varied blade attachments: the Extractor blade and the Milling blade

The cup of life

You fill up this cup with whatever it is you want to blend – this could be fruit, nuts or you can use the NutriBullet to crush ice too

One blender, two cups

You also get two small cups with your pack to empty your smoothie into, both hold up to 380ml of drink

Here's where the magic happens

Inside the base of the juicer, the NutriBullet has a powerful 600-watt motor and a cyclonic action that forces everything through the blades at an incredible 20,000 RPM



HOW TO MAKE THE BEST BLEND



01 Grab your ingredients

Start by filling up your lid with the ingredients for your smoothie. You can pick one of the many recipes in the book that comes with the NutriBullet or you can do what we do: grab anything and shove it in.



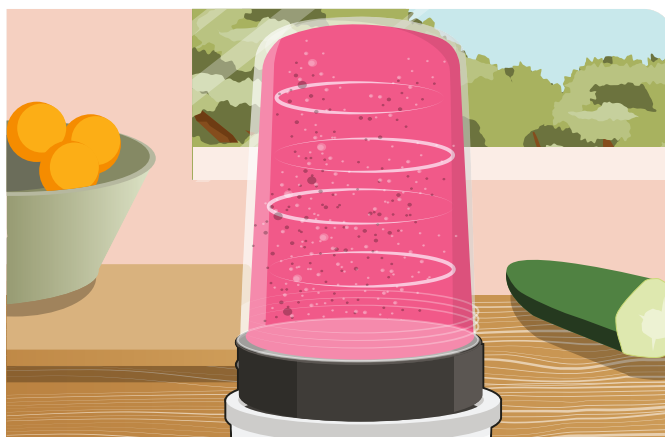
02 Screw on the base

Put in a small amount of water or juice to help the ingredients move when blending and then screw the base onto the top. Obviously make sure it's screwed on tight.



03 Attach it to the NutriBullet

Now turn the cup upside down so that the base of the cup fits onto the body of the NutriBullet. The joy of using the NutriBullet is that everything is so straightforward!



04 Get blending

Push the NutriBullet into place by pressing down and it will start to blend. Regardless of the variety of ingredients you use, this should only take a few seconds. To stop, lift your fruit-filled cup off the base.



05 Wash and go

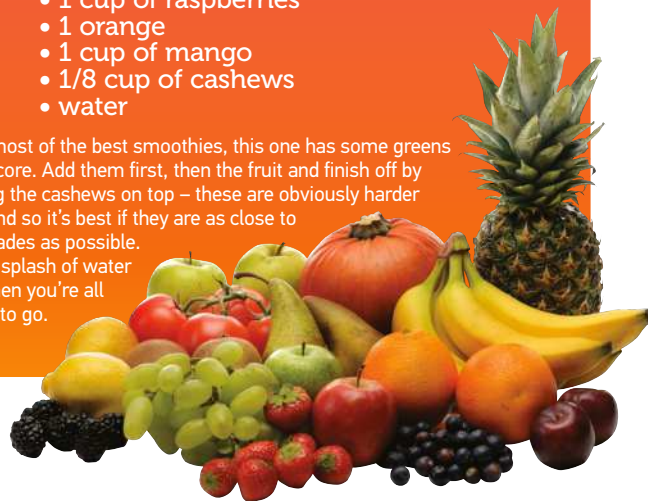
Now your smoothie's ready to drink! Just place a resealable lid on the cup and take it with you on your journey. As there are only a couple of elements to the NutriBullet, washing it out is as simple as every other step, just be careful when handling the sharp blade.

MORNING GLORY

Start your day in style with this delicious smoothie

- 2 handfuls of spring greens
- 1 avocado
- 1 cup of raspberries
- 1 orange
- 1 cup of mango
- 1/8 cup of cashews
- water

Like most of the best smoothies, this one has some greens at its core. Add them first, then the fruit and finish off by adding the cashews on top – these are obviously harder to blend so it's best if they are as close to the blades as possible. Add a splash of water and then you're all ready to go.



LIFE HACKS

MAKE THE PERFECT DIY SLUSHIE

Enjoy instant refreshment using household ingredients

It's impossible not to love a slushie, as no matter what drink you prefer, it's certain to taste better semi-frozen on a hot day. And although there are plenty of machines out there that will do the job for you (starting at just a few pounds and then going up into the thousands), it's actually incredibly simple to do it yourself with just a few things you've probably already got lying around.

What's more, making your own slushie is made even easier with the aid of science, as it would be impossible without using salt on the ice to slow down its melting process. The salt actually makes it possible to produce a delicious slushie in no more than 15 minutes.

You could always try making an alcoholic cocktail slushie. A margarita is delicious on a summer's evening – you'll need tequila, triple sec and lime juice for that one – but a quick search online will give you dozens of recipe solutions.

“It's actually incredibly simple to do it yourself”



01 Freezy-peasy

Of course, the easiest way to make your own slushie is to use a dedicated slushy machine (more on that below) but you can get some pretty impressive results from the DIY approach. For this you'll need two freezer bags, some ice, the drink you want to 'slushify' and some salt. Start by pouring the drink into the first freezer bag and then seal it – making sure that you've got as much of the air out of the bag as possible.



02 Ice to see you

Now put the bag into the second freezer bag and fill that one up with ice, checking first that the bag containing the liquid is completely sealed, as you really don't want any of the water/ice mixture getting in there. Don't fill it too much, mind, as you'll need to seal this bag too. Now you need to pour the salt over the ice – at least five teaspoons, but the more the merrier. Now seal the second bag completely and you're then ready to make your slushie.

COOLEST SLUSHIE MAKERS



Chill Factor Slushie Maker

A slightly different (and very cheap) way to make a slushie. Add the liquid, freeze it, then squeeze the soft sides of the device to turn its contents to mush. Crude, but it does work.

£10 | \$15 | thechillfactor.com



Gourmet Gadgetry Retro Slush Maker

This device works in a similar way to our step-by-step method, the difference is that just that everything's automated for you. We quite like the sleek and vibrant design of it, too.

£40 | \$55 | bit.ly/retroslush



Smart Slush Machine

'Smart' is the right word to use here, as not only will Smart's machine make a slushie to die for, but you can also use it to make other drinks too, such as margarita cocktails.

£100 | \$135 | smartworldwidefun.com



03 Shaker maker

The next step is to shake the bag about a bit. The purpose of this is to keep the liquid moving so that you get an even freeze throughout the mixture – the salt helps with this a lot, as it lowers the melting point of ice. If you're in a hurry, then the slushie will be ready in around five minutes or so, but we recommend shaking the bag for around 15 minutes, as the results are far more impressive – and you get a good workout to boot.



04 Keep it moving

If you're shaking the bag for the full 15 minutes then your hands will probably start to get a bit cold. One solution for this is to wrap the bag in a tea towel – the important thing to remember though is to keep the bag moving as much as possible. When you've finished, take the bag containing your slushy and simply pour it into a glass. It will melt quite quickly (as with any other slushie drink) so we suggest grabbing a straw and drinking it as quickly as you can.

WHY DOES SALT MAKE A DIFFERENCE?

If you try to make your own slushie without salt then it'll all go horribly wrong, the ice cubes will melt and you'll be left with quite a lot of water but not a huge amount of slushy. You need the salt because water turns into ice when its temperature is 0°C or less, and the salt actually lowers the melting point of ice, which in this case is the ice cubes around the bag of liquid we're trying to turn into a slushie.

The more inquisitive among you might ask why, and the answer is relatively straightforward. In pure water at 0°C, ice melts just as fast as water freezes. Adding the salt means that the melting point of ice can drop to as low as -21°C, because energy is required to snap the hydrogen bonds that hold the ice together, and the melting ice draws that energy from the surrounding solution as heat. Even after all the ice has melted, the temperature of the water left behind can remain below 0°C for some time, keeping anything it surrounds (in this case our slushie) much colder for far longer.



Ariete Sweet Granita Slush Maker

If you can't be bothered to spend the 15 minutes making a proper slushie, you may be interested in this device which crushes ice ready for you to add a syrup.

£40 | \$53 | ariete.net



Olaf Slush Maker

Of course, Disney have a Frozen-themed snow cone maker. It's almost identical to the original Frost machine from the Seventies. Like the Ariete, it just crushes your ice for you to then add a syrup topping.

£10 | \$20 | amazon.com

LIFE HACKS

HOW TO CARVE LIKE A PRO

Master the art of slicing and serving up meat treats

Carving the Sunday roast is a rite of passage, handed down from parent to child. It can be nerve wracking though, especially if you're surrounded by a hungry group of family or friends who are watching your every move. Like everything, however, there's a right way to do it and a vast number of wrong ways.

Should you go with a traditional knife or plump for an electric one? What's the best way to make sure your knives are always sharp? And what the hell is larder trimming? Luckily for you, my novice meat-carving friend, the answers to all of these questions can be found on these very pages. Have a butcher's at this.

“ If you really want to show off in the kitchen then splash out on a decent set of chef's knives ”

3 LOW-TECH WAYS TO SHARPEN YOUR CARVING KNIFE

01 Whetstone

Whetstones consist of high-quality abrasive grits – some fine, some coarse. Rubbing coarse stones against rough blades smooths the metal down, so you can use the fine grit to actually get your knives sharp.

02 Honing rod

Also known as a steel, these aren't used to make your dull knives sharp again, but rather to keep knives constantly in a working state by realigning the metal on a blade's edge and massaging nicks and indents away.

03 Coffee mug

If you have nothing else, the exposed ceramic ring you tend to get on the underside of a coffee mug is coarse enough to sharpen some blades. Just sweep the knife edge across it gently at a 20 degree angle.



Cutting edge

All the sharpening is done via these two tungsten carbide tools, which are set at 20 degrees – the optimum angle to get the perfect edge

Hands-free

Obviously you want to avoid knife or sharpener slippage and potential loss of fingers, so a cunning feature of the AnySharp is a locking suction cup that's activated when you pull down the lever

£10 | \$20
anysarp.com

AnySharp Pro Knife Sharpener

You can spend a small fortune on a stylish electric knife sharpener or you can spend a tenner on the simple to use and very effective AnySharp instead.

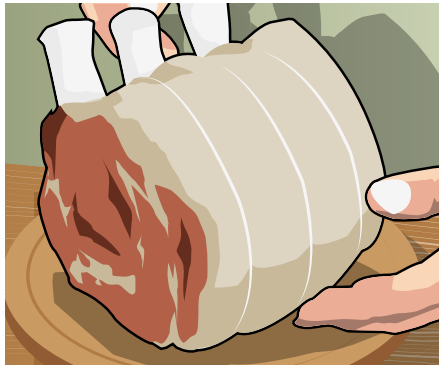
Best in the world?

It's a bold claim to be sure, but if there's a better knife sharpener out there then we've yet to see it

Lifetime guarantee

The AnySharp comes with a lifetime guarantee, so if you ever need to change the sharpening tools then you can get a new head, unscrew the old one and simply replace it

HOW YOU SHOULD REALLY CARVE A JOINT



01 Larder trim your joint Get your butcher to larder trim the fore rib of beef for you – this exposes the rib bones and removes the excess fat. Make sure they leave some of the fat, as this will keep it tender.



02 Now remove the backbone Flip the joint over and if the backbone hasn't yet been removed, then do so now. This will make carving the joint much easier after it has been cooked.



03 Leave it to stand Once cooked, let it stand for 10 to 15 minutes to help the meat firm up. With a sharp knife, cut along the edge of the ribs and follow the contours of the bones around the joint.



04 Insert the carving fork To help hold the meat in place, insert a carving fork about halfway along the joint. Make sure you give yourself plenty of room to carve, so if it's a smaller joint, insert the fork further back.



05 Ready to carve! Now you can carve. Cut across the grain and if the knife is sharp enough, you shouldn't have to press too hard. As you've removed all the bones beforehand, you should be able to carve the whole joint in one go.

MODERN VERSUS TRADITIONAL

Gadget lovers might be tempted to invest in an electric carving knife, but if you really want to show off in the kitchen then splash out on a decent set of chef's knives



Electric carving knife

Once the essential kitchen tool of every 1970s' household, the electric carving knife was slowly left at the back of kitchen cabinets gathering dust. Recently they've come back into vogue though, mainly helped by celebrity endorsements from the likes of chef James Martin. Although not ideal for everyday use, they're great for hacking into a turkey on Christmas Day or the Sunday roast.



Chef's knives

If you've got the money though, nothing reeks more of class and professionalism than a decent set of chef's knives. You can get a half-decent set for around £50/\$70 or splash out hundreds of pounds (or dollars) on a knife that will last you a lifetime. Japanese knives are generally considered the best and Global are one of the biggest brands in the world.

LIFE HACKS

COOK THE PERFECT PULLED PORK ROLL

Ideal for a good pig-out

Gastro fads come and ago, but pulled pork shows no signs of going out of fashion. The stringy, tender and delicious strands of slow-cooked shoulder seem to be the perfect bedfellow for a soft brioche bun and a spicy barbecue sauce. Traditionally, authentic pulled pork is a US barbecue dish that's cooked for hours over a charcoal pit until the meat is literally falling apart and then ready to be pulled apart or shredded.

Unfortunately, outside of Texas, most of us don't have the luxury of a charcoal pit in our backyards. But that shouldn't stop you making your own pulled pork as there's a very straightforward way to create it in your own homes. Although many will (try to) argue that making pulled pork is a science that requires a cunning blend of seasonings and very strict temperature control, the reality is that it's easy to make something that most would be convinced had been cooked over glowing charcoal embers for 12 hours in a blind taste test. Just follow our steps and you too will cook with confidence this summer.



01 Aye, there's the rub

Once you have your pork joint, mix up a dry rub of one part sugar, one part salt and one part paprika. If you want something a bit more spicy, though, then feel free to add garlic powder, mustard powder, cayenne pepper or cumin to the mix. Try out different combinations to find the one that suits you best. Once everything's mixed up, rub the spices into the joint. Before cooking, leave the joint in the fridge to cure for a few hours.



02 Slowly does it

Now you're ready to cook the meat. Find yourself a baking tray large enough for the joint and then put a wire rack in it, which is what the meat will rest on while it's cooking. Pour some water into the tray, which should be enough to stop the meat drying out, but not too much so that the meat is actually sitting in the water. Now cover the whole thing in foil and put it in an oven at around 140°C.



GRILLING GADGETS

If you'd rather not cook pulled pork in the oven, try these alternatives



Bear Paws

Described as the perfect tools to pull apart pork, it's very hard to disagree when you take a look at the lethal-looking pair that's guaranteed to tear apart any piece of cooked meat in seconds.

£5 | \$10 | bearpawproducts.com



03 Getting saucy

The joint will take around four hours to cook, so bring it out after that and check the middle of the meat with the thermometer. If it's cooked all the way through and comes away from the bone when pulled apart with a fork, then it's done. Now you can add some sauce to the meat and cook for another 10-15 minutes uncovered to crisp everything up, or if you've got a barbecue handy...



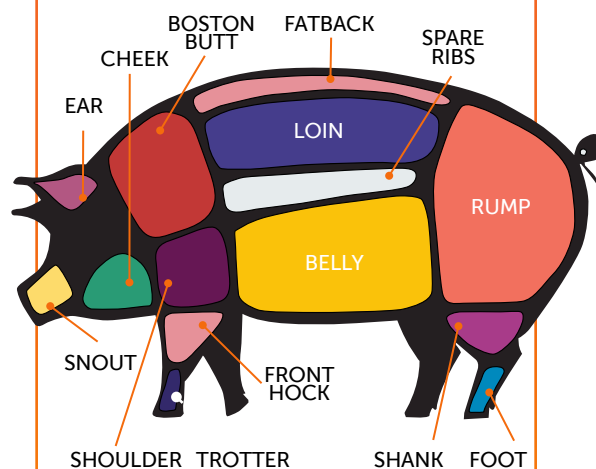
04 Fired up and ready to go

If you want to add even more flavour to it then you can always pop it on the barbecue for half an hour. Get the barbecue fired up and ready to cook on (use a charcoal grill for this) and then put the pork (skin-side down) onto the grill. Flip the meat after 15 minutes and then cook on the other side for another ten. Be very careful when you lift the meat on and off, or when you flip it, as it'll be very tender and liable to fall apart.

THE FIRST CUT IS THE DEEPEST

The first thing to know about making your own pulled pork is that the cut of meat you choose is very important. The meat shouldn't be too lean, so you want to pick a piece that's rich in intramuscular fat – in other words, you can see plenty of lines of fat running through the meat. This fat will break down as you cook the meat slowly, making the pork tender. There's only really one cut of pork that's suitable for the job, and that's the so-called 'pork butt' or 'Boston butt'. If you're mouth just dropped open in sheer horror, rest assured the name has nothing to do with rear end of a pig. It's actually an American term for the shoulder section of the animal, based on the fact that when meat was originally stored for shipping, it was placed into casks or barrels, which were also called 'butts'.

The shoulder is traditionally one of the cheaper cuts as it's not one that you'd use for a roast. Because of this, it's not one that you're likely to find in your supermarket. If you can, head to your local butchers and they'll be able to give you what you want. For the best cut, ask for a joint from the neck end and with the bone in. Alternatively, you could use a joint of pork belly. Although it isn't as meaty, it does cook a lot quicker and it's very easy to pull apart.



Weber Original Kettle barbecue

If you're going to finish off your meat in a barbecue to really go for that smoky flavour, then they don't come much better than a Weber – and make sure you go for the charcoal model and not the gas one. £170 | \$100 | weberbbq.com



Morphy Richards Slow Cooker

If you happen to have a slow cooker lying around then they're a great way to cook the meat, as you can put it on a low temperature and leave it all day to cook in a spicy marinade. £30 | \$40 | morphyrichards.com

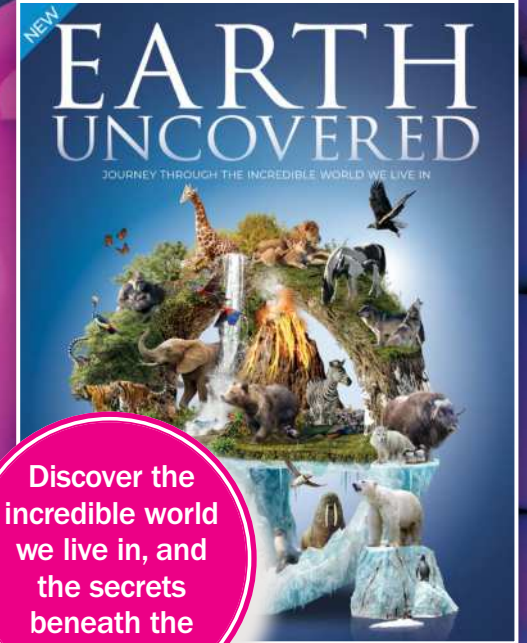


Landmann Digital Thermometer

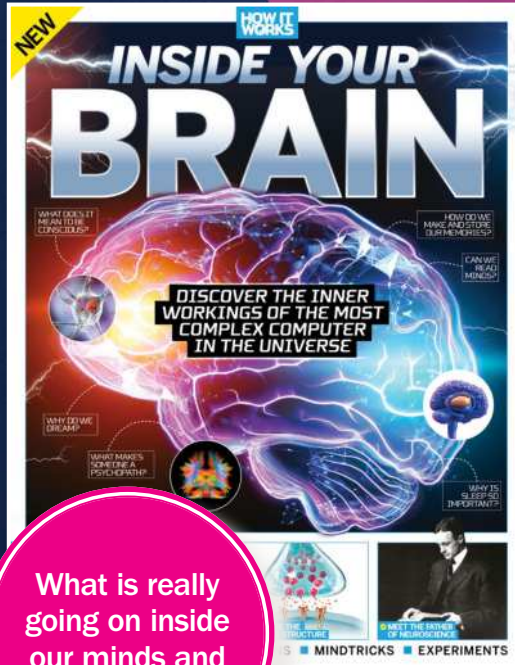
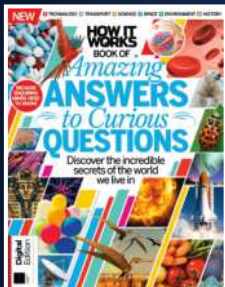
Making sure that a joint of pork is cooked properly is essential, and the easiest way is to invest in a digital thermometer. It's the quickest and most accurate way to make sure the joint is cooked. £20 | \$35 | landmann.co.uk



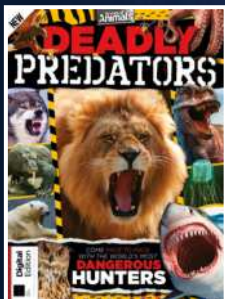
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Discover the incredible world we live in, and the secrets beneath the surface



What is really going on inside our minds and bodies?



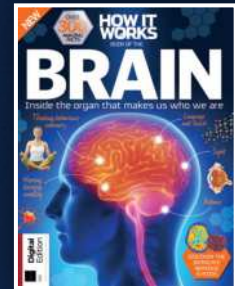
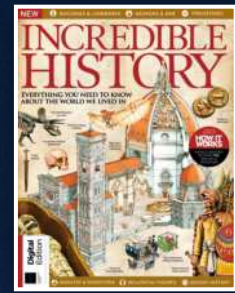
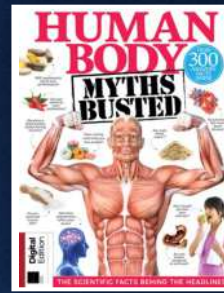
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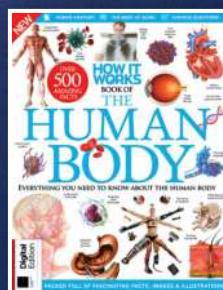
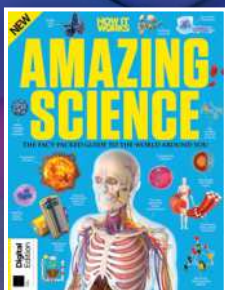


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How to build a shed



Grow a veg patch on your kitchen counter



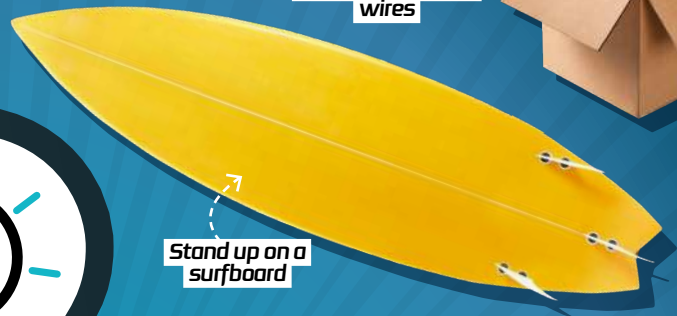
4 steps to avoid terrible eBay customer service



Don't nail through wires



Stand up on a surfboard



Chop wood like a champ



Turn your tablet into a PlayStation



Wi-Fi problems and how to fix them



Unsend those shameful emails



How to escape a burning building



How to cast a fly line



LIFE HACKS

LEARN HOW TO LEVEL UP YOUR LIFE SKILLS LIKE A PRO



AROUND THE HOUSE

From DIY fixes like putting up a shelf to the best way to stack your dishes, solve your household problems and make your life easier with these essential guides

TOP TECH TRICKS

Get the most from your media and devices. Sort your Wi-Fi performance, fix common phone issues, and do incredible things with your photos and videos

LEVEL UP

Get even more out of everything you do. Set up the best home cinema, work up to running a marathon, or simply enjoy the best food and drink with these tips

PRO TRICKS CLEVER IDEAS PROBLEM SOLVERS PERFORMANCE BOOSTERS