

# The Buyer's Guide to Technology

*How to choose the  
perfect kit for you*



THE  
HELPFUL BOOK  
COMPANY

An Employee-Owned Company

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# The Buyer's Guide to Technology:

*How to choose the  
best PC, laptop, tablet,  
smartphone or other bit  
of kit for you.*

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# How to Use This Book

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Once you've got a computer, tablet, smartphone or other bit of kit of your own, you gradually get to know it a bit better as you get used to it.

You might never become a world class expert (you probably don't need to) but you learn a bit more about how it works.

On the other hand when you're first looking for one, you might not really know very much at all. Which makes it difficult to choose which phone/tablet/PC/gizmo is right for you in the first place! You have to choose when you actually know the least about it!

So I've written this little handbook to guide you through what to look for when you're choosing a new device.

And also the best ways to get hold of your new bit of kit once you've chosen it.

## **I won't be recommending specific models**

I've avoided saying "You should get this model" or even "This is a good model if you want XYZ" because these things can change literally from week to week as companies bring out new versions, cancel old models,

change prices and even change the specification (spec) of a model that was already out.

So instead I'm going to take you through the things to think about and take into account when you're choosing.

## **How the book's structured**

The first part of the book has some general advice on where to go to buy your device.

Then I've split the rest into separate chunks, depending on what type of device you're after. On the first few pages of each chunk, you'll find fairly general advice to help you narrow down the type of thing you're looking for. Then there's more specific details to help you choose the set-up that's best for you.

You'll also find some hints and tips along the way from people here in the office – what they use themselves and why.

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# Where To Shop

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*First of all – your options for where to buy all your various bits of kit.*

## Local, independent shops

You might not have one where you live, but if you do have a local independent computer or gadget shop, you might want to give it a go. But bear these things in mind...



- A small shop won't have the same sort of **choice** that you get in the big chain stores or online.
- **Prices** are often a bit higher for the same equipment in that sort of place – because they can't buy in the same bulk as the bigger shops.
- Independent shops are usually run by people who are really into what they're selling. They're proper **experts**. Now that can be a good thing or a bad thing. Experts aren't always that good at explaining things simply and clearly to beginners.
- *Because* they're experts, you might not always find simple, entry-level things in their shops. You may find everything is just a bit fancier than you need.
- Some independent sellers are *great* at finding **exactly** what you need. They're a real person, who you can talk to about your needs and who will probably care about you getting the right thing.

- These places often give you better aftercare service as well – they’ll come and set your equipment up for you, or show you how to use it. And they know enough about the things they’re selling to help you if something goes wrong.

## Big chain shops like Currys

Another option is to go into a big chain shop, like Currys (for most things) or one of the network shops like EE (for mobile phones).



- These shops are huge, so they give you a **big range** to choose from.
- Their **prices** are very competitive.
- But it can be a bit **over-facing** going into a shop like that. There are *so many* options to choose from, it can be hard to know where to start.
- The **salespeople** are usually on commission, so they can be a bit pushy, and they’ll be keen to sell you something. It’s to their advantage to sell you something fancier and more expensive than you need, as well.
- How much the staff **know** about the products is a bit variable in the big chains. Some of them will be really into technology, know their stuff, and be happy to help you. Others – less so.
- You tend to get pretty basic aftercare, although they’ll usually set your equipment up for you.



## **Buying equipment online**

If you want the prices and the sort of choice that the big shops give you, without the stress of pushy salesmen, shopping online can be a good option. You get the chance to browse through all your options, in your own time, and take everything in.



If you're considering shopping online, though, there are some important factors to think about:

### **You don't get to *actually* see the thing**

One of the biggest differences between buying online and going into a real shop, is that all you've got to go on is photos and a description.

By going to a shop, you can actually feel what your gadget is like to hold, see the screen quality, press the keys on a keyboard to see how they feel. And all that can be important.

### **You're on your own**

There's no assistant there to help you decide what's best for you. You don't usually get any help setting up, either – although you can sometimes book a technician to come to your house once it's been delivered.

### **What you see for sale might not be a full package**

This is particularly a problem if you're choosing a new desktop PC. On a lot of websites, you have to choose the PC tower itself, a monitor, a keyboard and a mouse – all separately.

That's something to bear in mind when you're looking at prices, too. If you're going to have to buy extra bits separately, that adds to the cost.

### **Specifications can be a bit mind-bending**

When you're buying a piece of equipment online, there'll be pictures and a basic description. But before you decide whether or not it's right for you, you should check the "technical specification".

This lists all the actual features of the thing you're buying – e.g. the size of the screen, what processor chip it has (see page 27), how much storage it comes with (see page 29), etc.

And they can be a bit tricky to understand to an untrained eye. Here's part of one for a laptop:

SCREEN	
Touchscreen	No
Screen size	14"
Screen type	TN LCD
Resolution	Full HD 1920 x 1080p
Screen features	- Anti-glare - 220 nits
CONNECTIVITY	
WiFi	- AC WiFi - 1x1
Ethernet	No

There's so much detail there – but the bits that are fairly easy to understand are that this isn't a touchscreen laptop, and it can only connect to the internet using wi-fi (it doesn't have an "ethernet" port).

I'll talk you through the features you might want to look out for in various bits of kit as we go through the

book, but the “tech spec” is where to go to check for them. (You might want get a techy friend to help you with some of the specifications.)

### *Tips from the Office:*

*Why Claire will check the specification next time...*



Last year, we needed to replace our laptop at home, so I went online and found a new one.

The picture looked to be just what we were after, and the basic description sounded good. But the laptop in the picture *wasn't* the model that I'd ordered! It was a very similar but slightly different one (d'oh!)

The one in the picture had a CD drive – which we needed to run some old bat-identification software that my husband uses – but the one I ordered didn't!

So – moral of the story. If there's something you really need to have, *check the specification* (or ask someone to check it for you) before you buy...

### Where to shop online

There are *loads* of places to buy PCs, laptops, tablets and other equipment online...

1. If you want to have a **browse**, I'd try either Ebuyer ([ebuyer.com](http://ebuyer.com)) or Currys ([currys.co.uk](http://currys.co.uk)).

They're both pretty easy to use, and they have good systems for comparing different options. You might also want to give *ao.com* a try – they sell all sorts of home appliances as well.

2. If you've done all your thinking and already know which model you're after, you might want to use Amazon instead (*amazon.co.uk*). It's not so great for browsing, but always has good prices if you know what you're looking for.
3. Another option that can save you a fair bit of money is to go for returned stock or **manufacturer refurbished**. They're not brand new, and you don't have as wide a range to choose from (you just have to see what's there) but if you want a look, I've used *www.europc.co.uk*.

### *Tips from the Office:*

#### *Why Robin looks for refurbished first*



To save a lot of perfectly good tech going to landfill (and a fair bit of cash too), I always check whether there's a refurbished version of the thing I want first before buying it new.

I got my current laptop this way, by ticking the “refurbished laptops” filter option on the Currys website and found the exact spec I wanted, in near-perfect condition too.

## Buying second-hand

Buying second-hand can be a great way to save some money – but bear in mind that you're never going to get bang up-to-date equipment that way.

And unless you're buying directly from someone you know and trust, there are pitfalls to look out for:

- Much as I'd like to think everyone in the world is honest, there are plenty of **crooks** out there. So personally, I'd never buy second-hand technology from someone on Ebay. You just never know whether it's stolen or fake.
- There are plenty of **businesses** around selling second-hand gadgets – online shops like *www.musicmagpie.co.uk/store* or physical shops like Cash Converter. These official traders check everything they sell against police databases to make sure they're not stolen. And they do what they can to make sure equipment is genuine.
- New equipment comes with a **warranty**, whereas second-hand stuff might not. It's worth looking for an official trader who will offer you a warranty. You might only get 3 or 6 months, but it's better than nothing – although *musicmagpie.co.uk* give you a 12-month warranty on all their tech.

# General Tips

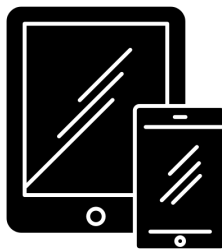
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For the rest of this book, I'm going to be giving you tips and walking you through choosing specific bits of kit. But first, it's worth you bearing these general tips in mind:

1. It can be helpful to have **someone else to talk to** who uses the same bit of technology as you – either to ask when you get stuck, or just to share the pain if it starts playing up! So if you've got family who use, say, a Samsung tablet, that's a good reason for choosing Samsung over a different brand.



2. In a similar vein – it's worth thinking about how well various different gadgets will **work together**. So, for example, if you have an Apple iPad, there are advantages to choosing an iPhone over an Android smartphone. It's easier to share things like contacts and photos between your devices, and you'll have a head start when it comes to learning how to use it.



3. You **don't need the newest, fanciest** bits of kit.



There are some amazing gadgets out there – laptops and phones with *foldable* screens, or sunglasses with tiny built-in speakers rather than clunky headphones! But unless you're *desperate* to get your hands on them, I'd suggest

waiting for them to come down to a sensible price, and for other people to point out all the issues with them!

4. Remember that you **don't have to buy something** just because you've gone into a shop to look at it. It's the salesman's job to sell you something – and they'll try their best to do just that – but don't feel pressured into making decisions on the spot!

Right then – time to get stuck in!

# PCs, Laptops and Tablets

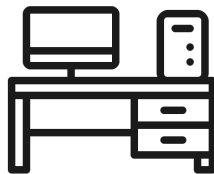
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*First things first – before we get into the finer details. Broadly speaking, what type of thing are you looking for?*

## Desktop, laptop or tablet

The first thing you need to decide is what type of device you're after – and that really depends on what you want to use it for and where you want to use it.

If you need something really powerful (e.g. for video editing or fast-action games) or really reliable, then it's hard to beat a traditional **desktop PC**. They do take up quite a bit of space though.

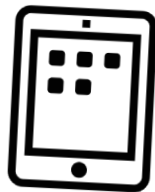


**Laptops** are easier to carry around or put away in a drawer when you're not using them. But they don't tend to last as long as desktop PCs – everything's packed together very tightly, and that can mean they overheat more easily and end up having problems. That's less likely



to be a problem with some newer laptops that have what's called a "solid state drive", but I'll come back that later.

Another option is to get a **tablet** instead. There are several reasons people want a tablet rather than, or as well as, a "proper" PC or laptop:



- They're light and easy to carry about, so they're ideal if you travel a lot but still want to keep in touch by email or have access to the web.
- They don't have fans or other moving parts, so they tend to be pretty hard-wearing.
- They're easy to hold with one hand, so the other hand's free to control them. So they're ideal when you're not at a desk.
- They're more like holding a book, which means they're more comfortable if you're reading an e-book, or browsing the web or maybe reading the newspaper online.
- They take up less space than a PC or a laptop.

So if all you tend to do on a PC is email, use the web, maybe watch some online videos and TV, then a tablet will do everything you need. And if you pick the right one, it could be cheaper than a PC.

They're not ideal for large amounts of typing, though, or creating complicated spreadsheets. They can do it, but it tends to be a bit fiddly. Getting one with

a detachable keyboard really helps with that sort of thing though.

## How important are the size and weight?

Another thing that's really worth thinking about, is how heavy you're happy for your device to be.

Of course the weight often depends a lot on the size – and what size device you want depends mainly on how you plan to use it.

For example if you're buying something to use mainly at home on a desk – either to work on or play games – you probably want something with a fairly big screen and you won't mind so much if it's a bit heavy. You'll probably be best off with either a desktop or a decent-sized laptop.

On the other hand, if you want to take it out and about and use it in cafés and on trains, then you probably want something small and light and don't mind if the screen isn't too big.

## Choosing an operating system

The next big decision is which operating system you want.

For **laptops and desktops** the main choice is Windows and nowadays that's Windows 11. But there are other options, too – Apple Macs, Google Chromebooks and Linux of various versions (which is great but not ideal for a



beginner).

For most people, unless you have a particular reason to choose one of the others, Windows is probably your best bet. But I'll come back to the pros and cons of different types of computer on pages 16-18.

For **tablets**, there are two popular choices: iPads (made by Apple) and Android or ChromeOS tablets (the systems are made by Google but the devices are made by all sorts of companies).



You can also get Windows tablets, which use the same Windows 11 as ordinary laptops.

They're all good systems that work well and are designed to be generally pretty easy to use. They *do* have pros and cons, though – and I'll cover those in detail on pages 52-55.

## Choosing a make or brand

Some people start by choosing this – and if you've been happily using (say) an iPad, or a Samsung tablet or a Dell PC in the past, there's nothing wrong with sticking to the brand you know.

I'd be inclined to leave choosing the make until later, though. Work out what you want your device to do first, then find a model that does all those things.

If you decide to go for **Apple**, then the gadget will be made by Apple, too, as they won't let anyone else use

their system. So you'll be getting either a Mac (if you go for a desktop or laptop) or an iPad if you want a tablet.

But if you decide to go for a **PC**, **Android** tablet or **Chromebook**, there are lots of makes to choose from. I'll talk you through your options in a bit more detail later in this section.

### *Decision Point*

Right – after reading the last few pages, you should be at a point where you can make some decisions...

- Looking for a **desktop**? For advice on choosing a desktop PC or Apple Mac, go to page 15.
- Looking for a **laptop**? For advice on choosing a laptop PC, Apple Macbook or Chromebook, go to page 34.
- Looking for a **tablet**? For advice on choosing an iPad or other tablet, go to page 52.



# Choosing a Desktop

.....

*If you've decided that it's a desktop you're after, that's one big decision out of the way. But there are still lots more choices for you to make.*

*Let's get stuck into the details...*

## What price bracket are you looking in?

There's a pretty wide range of prices for desktop machines these days.

I've just been on the Currys website, and prices start at £380 for a basic desktop PC – with a monitor, keyboard and mouse. Or at the other end of the scale, you can pay over £3500 for a top-of-the-range gaming PC without any of the other stuff – you'd need to buy a monitor separately.



So it's a good idea to have a feel for your budget before you start. For a mid-range machine, you should be looking to pay somewhere in the region of £500.

The main things that affect the price are:

### **Processor Speed and RAM**

Two of the biggest things that make a computer more

expensive are the type of processor it has in it and the amount of RAM or “memory” it has.

I’ll cover these in more detail in a few pages’ time.

## **Brand**

There are cheap brands and more expensive ones. Some of that is just about “style” and the name, but a lot of the difference comes from the type of processor chip and the amount of memory different manufacturers put in their computers.

If you’re looking for a budget model, either an Acer or an ASUS is a very good place to start. They’re both pretty no-frills options, but they’re cheap and decently built.

HP and Dell are reliable, mid-level brands.

Lenovo models start to get a bit more expensive, but they’re pretty good value for what you get, and they often seem to be discounted.

Then at the top end, you get Apple, and the specialist gaming brands like “Overclockers”.

## **Windows PC or Apple Mac?**

There are lots of different manufacturers of Windows PCs – but a PC is a PC. They all work in the same way, running Windows 11.

Apple Macs are different. They don’t run Windows – they use their own system instead, called MacOS. The



way it works isn't a million miles away from Windows (they used to be more different once upon a time, but the two systems have got more in common now).

If you're considering an Apple Mac instead of a Windows PC, here are a few things to bear in mind:

- Macs really are top-end bits of kit. They're lovely to look at, well-built and reliable – with a price tag to match! (*Having said that, you can get a similar standard of Windows PC if that's what you're after – Lenovo is a good option if you're looking for both style and build quality and it'll most likely cost a lot less than a Mac.*)
- If you have programs or apps that you use on a PC at the moment, there's a good chance they won't work on a Mac. You can often get both Mac and PC versions of the same programs, but you usually have to pay for them separately.
- Having a Mac can be good if you use other Apple kit – say you have an iPad or an iPhone that you use a lot. They work well together. So it's easy to get access to all the same contacts, photos, music, etc on all your devices that way. Likewise if lots of your friends and family use Apple – it's easier to share things like photos (and they might be able to help you if you get stuck!).
- Sharing files with other people is generally easier from a PC (unless they're also using an Apple device). So if you want to be able to share photos easily, or work together with someone on (say) club accounts – you're usually better off with a PC.

Most of the decisions you'll need to make when you're choosing a new computer come down to what you're going to use it for.

With the Mac vs PC decision, it's more about what else you do – separately from the computer you're buying.

If you're already part of the whole world of Apple, then it makes a lot of sense to stick with them.

If, on the other hand, you're used to a Windows PC – or want to easily share things with other PC-users – you might want to give the Mac a miss.

### *Decision Point*

Whatever you decide at this point, you'll have more choices to make over the next few pages. But this is a good time to scribble down where you've got to so far:

- I'm looking for a basic, entry level PC – I don't need anything fancy.
- I want something a bit more powerful, but I'm still after a PC.
- I want something that will be good for fast-action 3D games or video editing.
- I'm looking for an Apple Mac.

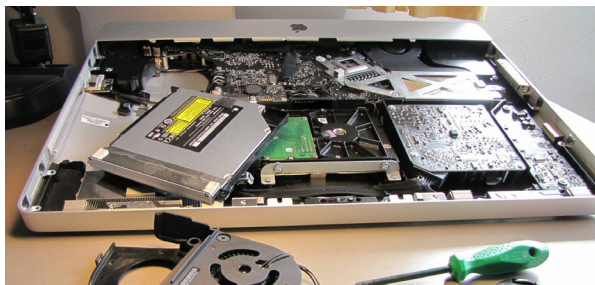




## All-in-one, tower PC or “gaming”?

There are two main types of desktop set-up:

- You can either have a **tower PC** (a box that’s the computer itself), with a separate monitor. You might have speakers built in to either your PC tower or monitor, or you might need to get separate ones that plug in.
- Or you can get an **all-in-one** that has the monitor, speakers and all the actual computer gubbins built in to one unit. Here’s a picture of one opened up – all the bits of the computer are tucked neatly away behind the monitor screen:



Which is best for you depends (as usual) on how you’re planning to use it.

### All-in-Ones

An **all-in-one** is nice and sleek and tidy. You don’t have a big clumsy box taking up space either on or under your desk.

The main disadvantage with one of these, though, is the same as the problem with some laptops.

Everything is packaged in very tightly, so there's a risk of the bits inside the computer overheating. This could lead to the computer not lasting as long.

They're also less likely to have a CD or DVD drive (if that matters to you).

You can get all-in-one Windows PCs made by various different manufacturers or all-in-one Apple Macs that are called "iMacs".

### **Tower and monitor**

If you've got room for a **separate tower and monitor**, they tend to give you a bit more choice in terms of what's included. So if you want a DVD drive, or a particularly big hard drive for storage, that could be a better option for you.

If you *do* choose a tower PC, you'll usually need to buy a monitor separately, though – especially if you're ordering it on a website. So make sure you take that into account – particularly when you're comparing prices.

Getting them separately does give you the chance to choose the size and quality of monitor that you want. There's more about choosing a monitor on page 22.

Most towers are Windows PCs, but Apple do a couple of models – the most affordable being the Mac Mini. It's just a little box that you plug a separate monitor into.

### **"Gaming" towers**

Computers that are branded as "**gaming**" machines

are mostly tower PCs. They tend to come in quite big cases with lots of room for air to circulate (to reduce the risk of overheating), and they're designed so you can easily open them up and tinker with them.

The idea is that you can take bits out and replace them with better bits – better sound, better graphics or whatever you need – without having to replace the whole computer. Most PCs used to be made like this, but it's becoming quite a specialist thing now.

If you do happen to be looking for an upgradeable machine, though, a gaming PC might be the way to go – they do tend to be quite pricey, though.

**Keyboard and mouse:** Whichever option you go for, you'll need to choose a keyboard and mouse separately – I'll go through your options later, see pages 98-105.

## *Decision Point*

Okay – what do we think then?

- If you're after a nice, tidy **all-in-one**, you can skip the next bit about monitors and go straight to page 27.
- If you'd prefer the flexibility of a **separate tower and monitor**, then I'll talk you through making some decisions about your monitor next.



## What are my options when it comes to a monitor?

### Size

The most obvious choice to make with a monitor is the size.



A bigger screen can be very useful if you want to be able to look at more than one app on your screen at once. So I have a nice big monitor at work – it means I can have the book I'm working on open on one side of the screen, and some reference things open on the other side.

A big screen can also be good if you like to watch or edit videos on your computer screen, or do detailed photo editing.

Bigger monitors do use more electricity than smaller ones, though – and of course, they take up more space on your desk.

It's also worth thinking about the **shape** of your monitor. Most modern ones are wide-screen, but you can still get squarer ones if you prefer. A squarer monitor is better if you need to fit it into a tight space, because you get more screen for the same width that way.

The sizes of monitors are quoted (in inches) as the distance from one corner to the opposite corner. With a wide-screen monitor, you need a much bigger diagonal size to get the same height of screen compared with a traditional squarer-shaped monitor.

## **LCD or LED?**

If you go into a shop like Currys, or browse the monitors on their website, you'll see that some of them are labelled "LCD" and others are "LED".

You might be wondering what the difference is.

LCD stands for Liquid Crystal Display – and pretty much *all* monitors these days use LCD technology. But for an LCD monitor to work, it has to be lit from behind. And *that's* the difference.

If you see a monitor that's *called* an LCD, that almost certainly means it's lit using fluorescent tubes. LED monitors are a slightly newer technology. They still use an LCD to display the picture, but it's lit using a whole load of little LEDs instead.

Compared with fluorescent back-lighting, LEDs use less electricity, run at a lower temperature and weigh less. They're also cleaner to recycle when your monitor eventually goes to meet its maker.

LCD monitors do tend to be cheaper to buy, though.

## **Resolution and colour**

The next thing for you to think about is the resolution – which is how many dots it uses to make the picture. The higher the resolution, the sharper the picture (up to a point).



If you compare some screens that have a lowish resolution, they just aren't as sharp and nice to use as the better ones. But if all you want to do is browse

the web and send the odd email, it probably doesn't matter.

If you want to read e-books or watch films on it, you want a nice sharp screen, even if it costs a little more.

For watching films or editing photos and video, you'll also want a screen that displays colours vividly (e.g. a full HD monitor).

So again, it's horses for courses – it all depends what you want to do with it.

### **Viewing angle**

The last thing I want to mention about screens is something the shops never seem to mention much: the viewing angle. This is whether the picture still looks good if you're slightly off centre when you look at it. And it can be very different on different screens.

If you'll only ever use your PC on your own, you probably don't mind. After all, you'll be sat straight in front of it.

But if you use it along with someone else – for example to watch TV along with your other half – then you want to make sure that even if you're sat a bit off-centre, it'll still look good.

### **How to tell what a monitor will be like**

You can find out basic facts about a monitor – like its size and resolution – online. But if the colours and viewing angle are something that matter to you, your best bet is to go into a shop that sells the monitor you're thinking of getting and try it out.

## Other features

As well as displaying your computer screen, a lot of monitors come with added features. You should think about whether or not those features are important to you.

For example:

- Some monitors come with a whole load of **USB ports** on the back and sides. Having extra ports on your monitor means you can plug more in to your computer, and you've got more choice over where you plug them in. Ports on the side of a monitor are often easier to get to than ones tucked away at the back of your PC tower.
- If you've got a tower PC rather than an all-in-one or laptop, you probably won't have a built-in **microphone** or **camera** for video calling. But you can get monitors that include those things if you don't want to faff about with separate ones.
- Some monitors come with **speakers** in the sides. Even if your tower has built-in speakers, you might prefer to use monitor ones if you keep your tower on the floor under your desk – you'll almost certainly be able to hear things better that way.

All these extra features tend to add to the cost of the monitor though, so you should think carefully about whether or not you want them built in.

You can buy stand-alone speakers, microphones and webcams that are often better quality than the built-in ones. But I'll come back to those later (see pages 46-47).

## Tips from the Office:

*You might find a second monitor handy*

Some of us in the office find having two screens really helpful – for example when writing a book in an editing program and having to look at a document of notes at the same time, so they can both be visible in full on different screens.

It can also be useful to plug a separate monitor into a laptop if you mainly use your laptop at a desk, so you can see things on a bigger screen – just make sure you have the desk space for it!

## Decision Point

Once you're happy that you know what sort of monitor you're after, you can move on to deciding what you want from the computer itself:

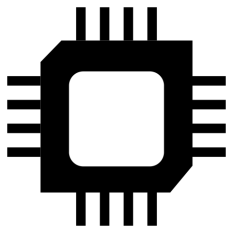
- If you're just looking for a fairly standard monitor, you're fine to choose one **online**.
- If you want to check things like colour, viewing angle or size in person – you're best off going into a **shop** to choose one.





## Processor speed and memory – do you want to be able to play fancy games?

The first thing to think about with PCs always used to be how fast the processor (or CPU) was and so how fast the PC would run.



This is still relevant for PCs, but it's not just about the processor speed – it's about how much memory (or RAM) it has and several other things as well.

You can often get a rough idea of how fast a PC is going to be just by price – it's often one of the biggest things that makes it more expensive. Or you can ask in a shop which one is quicker.

Before you do that, though, have a think about how you're going to use it. If you're just going to browse the web, send emails, play simple games and maybe do a bit of photo editing, you probably don't need anything very fast. Even watching videos or making video calls isn't particularly demanding for a modern PC.

On the other hand if you want to edit home video or play fast 3D games then you'll need something faster.

### **Choosing a processor chip**

It can be a bit hard to tell what the actual processor speed is, because they all use *names* like “Intel Core i5” or “AMD Ryzen 3”. Generally, the higher the number

in the name, the faster the chip – so an “Intel Core i9” processor is faster than an “Intel Core i5” and so on.

Intel and AMD both make very good processor chips, but their options are fairly bewildering!

### *Tips from the Office:*

*Why processor chips have such baffling names.*

They're not just trying to confuse you (honest!). Each time one of these companies comes up with an idea for a new type of chip, they give it a *name* so you know what “family” it's from.

So, Intel have the “Celeron” range, the “Pentium” range and now the “Core” range – they're about due another new one, actually.

The new family of chips will be different from the old one in lots of ways – not just speed – hence the distinction.

At the moment, the best processors are the **Intel Core** range and the **AMD Ryzen** range.

## How much memory (RAM)?

The numbers themselves change over time, as fancy new programs and apps are made that need more memory to run, but here's a general rule of thumb:

- Cheap models are often kept cheap by including the bare minimum of RAM – at the moment, that's about 2GB. A PC with only just enough RAM will probably frustrate you over time – because it won't be able to handle new apps very well.
- Top end models or gaming PCs will have more RAM than you can shake a stick at – because they're designed to run really demanding things like online, fast-action 3D games.
- You'll probably be looking for something somewhere in between the two.

Right at the moment, the recommendation is at least **4 GB** of RAM for a standard PC, or at least **8 GB** if you want it for video editing or gaming.

But as I say – these actual numbers will get bigger over time.

## **How much storage space do you need?**

The storage space on your PC is where it keeps all your apps, any music, photos or videos, ebooks, emails and so on.

If you don't have much storage, you might find yourself having to delete things that are filling it up every so often (possibly after saving them to some other device

or to the “cloud”). That might not bother you – but if it will, it’s worth thinking about before you buy.

There are two types of storage that you can get for a PC. The traditional type is called a Hard Disk Drive (or HDD), but most modern PCs now have something called a Solid State Drive (SSD) instead.

### **Hard Disk Drive or Solid State Drive?**

Traditional, HDD, hard drives have been around for donkey’s years. They work pretty well, they’re cheap, and you can fit a *lot* of information on one of them.

It’s not unusual these days to see a PC with a 2 TB (terabyte) standard hard drive. A TB is about 1000 GB – and if you think that you can store hundreds of photos in just 1 GB, that’s a lot of space!



The disadvantage of an HDD is that it’s an actual, spinning disc. It has a mechanical arm attached to it to read the right bit of information. Which means it’s quite noisy and it’s relatively slow – which can make apps and programs slow to open.



This is why most new PCs are built with a solid state drive (SSD). This is the type of storage that’s used in tablets and smartphones. It works differently, so it doesn’t need any moving parts.

SSDs are much, much faster, use less power and work silently. They're *much* more expensive for the same amount of storage, though – so in practice they tend to be smaller (256 GB is pretty standard at the moment).

So, as usual, it comes back to what you want to use your PC for. If you want lots of space – e.g. for storing video or high resolution photos – then you might prefer a traditional hard drive, although you might struggle to find a new one with a built-in HDD now.

### The best of both worlds?

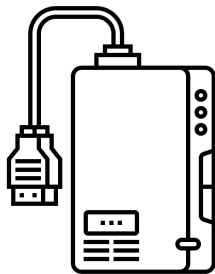
One option that I've seen in the past is a PC with *both* a small SSD and a bigger traditional hard drive. It's a clever set-up actually.

The idea is that you put your apps on the solid state drive – so they run nice and quickly and smoothly. Then you use the traditional hard drive to store all your big files (photos, music, videos or whatever).

You're more likely to be buying a PC with a built-in solid state drive, though – but you can buy a separate plug-in, portable hard drive for storing big files.

You can get portable hard drives from shops like Currys, or online, e.g. from Amazon. At the moment, a good quality 1 TB one will set you back about £50.

The hard drive connects to your PC using a normal USB cable, and you can just keep it plugged in all the time if you like.



## Decision Point

Over the last few pages I've been through your options for the processor chip, amount of RAM and storage space. It's just worth having a pause at this point and jotting down your thoughts.

### Processor and RAM

- Do you want your PC to be able to handle **fast-action graphics** or **big video files**? If so, you'll want a fairly quick processor and plenty of RAM. *(At the time of writing, I'd suggest something like an Intel Core i7 with 8 or 16 GB of RAM – but these things change very quickly!)*
- If you want your PC for **less demanding** things, you're fine with a cheaper processor and about half the amount of RAM.

### Storage

- You might be able to get a second-hand or refurbished PC with a traditional (HDD) hard drive for plenty of storage space.
- The standard for new PCs is a solid state drive (SSD) with less storage for the price – but maybe enough for what you need.
- Or consider having one of each – a built-in solid state drive and a portable HDD.



## Other features

There are other bits and pieces that you'll want to consider when you're choosing a specific PC and monitor, or all-in-one set-up:

- **Speakers** – do you want built-in ones or separate ones? Built in speakers are convenient, but separate ones will give you better sound quality.
- **Webcam and microphone** – some monitors and most all-in-ones come with these built in, but again you can get separate ones if you prefer.
- **CD/DVD drive** – it's rare for a PC to have these nowadays. You can always buy a separate disc drive if the PC you want to buy doesn't have one.
- **Wi-fi** – while any laptop you buy now will have built-in wi-fi, not all desktops do. So if you don't want to have to use a cable to connect your computer to the internet, it's worth shopping around for one with wi-fi included. Your other option is get a little plug-in USB wi-fi adapter instead.
- **Ports** – most things connect to your computer using a standard USB port these days. And that's great, it makes everyone's life much simpler. But there are some other options that you might want as well. For example, some PCs come with card-reader slots that you can put an SD card straight into (e.g. from a phone or camera).

I'll cover these extra features in more detail a bit later in the book, so when you're ready skip to page 45.

# Choosing a Laptop

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*When it comes to choosing the best laptop for you, a lot of your decisions are the same as those for a desktop. But not quite all...*

## **What price bracket are you looking in?**

I talked in a bit of detail about what makes one computer more expensive than another for desktop PCs, back on pages 15-16.

The price range for laptops is even bigger than for desktop computers. You can pick up a really basic one for under £200, but there are also a couple on the Currys website for as much as £4000!

There are lots of different types and sizes of laptop, and that really affects the price.

So although it's worth you having a feel for how much you're prepared to spend, you're probably best off making a few other decisions first.

## **Windows laptop, MacBook or Chromebook?**

When you're choosing a laptop, you've got three different operating systems to pick from. I went through the pros and cons of Windows vs Apple on



page 16 (you'll probably want to read that in a minute.) But with laptops, there's a third way – a Chromebook.

Chromebooks have their own operating system called ChromeOS, which works a bit like Android for smartphones and tablets. In fact, using one is more like using a tablet than a traditional laptop – because the idea is that you do pretty much everything online.



### **Advantages of a Chromebook:**

- They tend to be cheaper than the equivalent quality Windows laptop or MacBook.
- They're light and have a very good battery life.
- If you've had an Android smartphone or tablet before, they're quite similar to use.
- You can either download apps from the Play Store or work directly in the Chrome web browser – e.g. you can use Google Drive for storing files online or Google Docs for typing letters. A lot of these are free to use – all you need is a Google account.
- Most Chromebooks include the full Google Play Store, so you can use any apps that you get on a phone or tablet (including things like Skype for video calling).

### **Disadvantages of a Chromebook:**

- They usually come with a *tiny* amount of storage space (see page 29) because the idea is that you

store your files online. Most Chromebooks come with standard USB sockets, though – so there's nothing to stop you plugging in a portable hard drive (more about those on page 31).

- They only really work if you've got an internet connection.
- You can't install programs like Microsoft Office on them (although you *can* use the online versions of Word and Excel).

So if you're looking for something to mostly browse the web, send emails from, maybe watch some videos or play a few simple games – a Chromebook could be a good choice.

But they're no good if you want to be able to use specific programs that aren't on the Play Store, do intensive things like video editing, or play games or use programs that you've already got for a PC.

If you don't think a Chromebook's for you, the other options are a Windows laptop or an Apple MacBook. Have a look at page 16 to help you decide.

### *Decision Point*

Quick decision at this point before we move on.  
Do you think you're after:

- a Windows laptop,
- an Apple MacBook,
- or a Chromebook?



## What style of laptop are you looking for?

There have always been various different sizes and weights of laptop – depending on how portable you needed them to be – but now there are other options too.

I'll go through the various different types of laptop you can get here, and the pros and cons of each.

### Desktop replacement



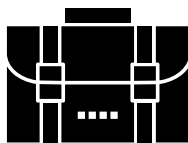
If you're buying a laptop to use mainly at home on a desk (but you want to be able to put it tidily away so you want a laptop instead of a desktop) then you probably want something with a fairly big screen and decent-sized keyboard.

A “desktop replacement” laptop tends to be fairly bulky and heavy, but that should be okay if you're not moving it around very much.

This type of big laptop comes with a wide range of price-tags, depending on what level of computing power you're looking for. You can get anything from a basic £250 Chromebook to an all-singing-all-dancing gaming laptop for £3500.

### Lightweight travel laptop

If you're going to want to carry your laptop around with you – maybe to use when you're travelling – then a



smaller, lighter laptop is a better option.

The compromise is a smaller screen and potentially a more fiddly keyboard.

But there's nothing to stop you getting a separate keyboard and mouse to use at home – and even a separate monitor to keep on a desk if the laptop screen is too small to use comfortably. (See page 22 for advice on choosing a monitor, and pages 98-106 for mouse and keyboard options.)

### **Touchscreen laptop**

Instead of the screen just working like a monitor, a lot of laptops these days have a touchscreen. That means you can control the laptop by touching the screen, a lot like the way you'd use a tablet.



So you can touch things on the screen (lightly) with your finger instead of clicking with a mouse, or swipe your finger up and down the screen to scroll up and down a page – say, a webpage. I do that a lot on my laptop, because I find it easier than using the scrollbars at the edge of the screen.

Touchscreen laptops do tend to be more expensive than standard ones, though.

### **2-in-1 laptops, transformers and hybrids**

Lots of people choose to have both a PC (desktop or laptop) *and* a tablet (which I'll come back to on page 52).

Tablets are great if you want something that you can sit and relax with for checking emails or reading something on the web. But they're not so good as work machines – so I've got a laptop at home for doing anything that takes a fair bit of typing.

Manufacturers are trying to give you the best of both worlds now, by making “2-in-1” laptops that you can turn into tablets when you don't need the keyboard. But as with most things tech-related, there's more than one way to skin this particular cat.

The way a lot of manufacturers have gone about it is to make something that's basically a touchscreen laptop that folds backwards on itself – to tidy the keyboard out of the way. A bit like this:



It's still a laptop at heart, which means it's chunkier to hold and heavier than a normal tablet. But that does mean you've still got all the advantages of a laptop (albeit quite a small one).

You usually get all the standard sockets down the sides for plugging in things like a printer, memory stick or separate mouse.

## Tips from the Office:

Why Kathryn had one of these at University.



I had one of these folding 2-in-1s called a “Yoga” at uni, but not for any very good reason I’m afraid!

I just thought they were really cool – and I loved the look on my friends’ faces as I opened the laptop and just kept folding it further and further back. They kept waiting for the hinges to snap! (*I’m such a child.*)

## Or more tablet than laptop...

The other obvious way of combining a laptop with a tablet is to start with a tablet and transform it by adding a proper keyboard that you can take off again.

You can even buy special keyboard cases like this one to keep them together like a laptop:



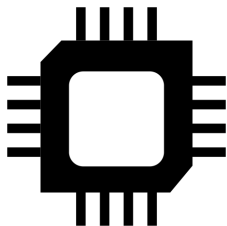
They’re much lighter, and when they’re not attached to the keyboard they work just like any other tablet. But that means you don’t get all the standard sockets for plugging things in, and that can be a pain.

## Processor speed and memory

Another thing to think about when you're choosing your laptop is the processor and memory (or RAM).

I went through this in detail for desktops on pages 27-29, so go back and have a read of that now.

Then come back here, because there are a couple of bits that are specific to Chromebooks...



### Chromebooks don't need as good a processor

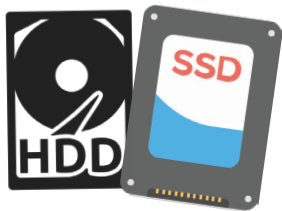
If you've decided on a Chromebook, you don't need to worry too much about the speed and "family" of the processor. Some of them use basic Intel processors, some use mobile phone processors. Only the more expensive ones use anything as fancy as an Intel Core.

But that's okay, because the laptop itself isn't having to do that much work. A Chromebook is a very simple device, and a lot of the heavy lifting is done online.

It's still important to have enough RAM, though.

## Storage space

Most laptops these days come with a solid state drive for storage rather than a traditional hard disk drive. I explained the differences between the two on page 30.



What that means is that you generally don't get very much built-in storage space for things like photos, videos and apps.

If that bothers you, you could invest in a portable USB hard drive to increase your storage space (see page 31).

It depends what you want to use your laptop for. If you're not going to be storing lots of big files on it (video files in particular), then you should be fine with just a 128 GB or 256 GB solid state drive.

Chromebooks might have Embedded Multi-Media Cards (eMMC) or Universal Flash Storage (UFS) instead. These are more like the storage in smartphones, and tend to be smaller, simpler and cheaper than SSDs.

## Screen quality

A lot of the things I wrote about for monitors on pages 22-25 apply to laptop screens, too.

If you're going to be using your laptop a lot, it might be worth paying a little extra for a high resolution screen. And if you're going to want to use it for watching TV or videos, then you'll probably want to check that colours display well on it, too.

## Battery life – how important is it to you?



Battery life is one of those things that will only matter to some people. If you're choosing a laptop



as a desktop replacement, then you can just leave it plugged in to the mains while you use it, so it's not a big deal.

But if you're going to be carrying your laptop around and using it where you can't easily get power, it can make a massive difference.

All else being equal:

- The bigger the screen, the shorter the battery life – because displays are very power-hungry.
- More powerful processors use more battery power to run.
- Traditional hard drives use more power than solid state drives.

Powerful laptops with big screens tend to be fitted with bigger batteries, though. So in practice, it mostly balances out.

You can check what the battery life is like in the specification of the laptop (see page 4) before you buy it.

Most Chromebooks will run for a long time on one charge, because they don't need to be very powerful machines.

MacBooks tend to be pretty good as well, because they use very efficient (and expensive) batteries.

But Windows laptops vary massively – so it's well worth checking if you want to take your laptop out and about with you.

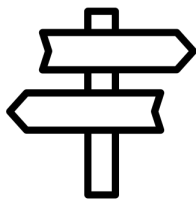
## Decision Point

So those are the main things you need to think about when you're choosing a new laptop.

Here's a range of options that you might end up with:

- ❑ A **large, powerful**, machine with a fast processor, plenty of RAM and good-sized hard drive. This is a genuine replacement for a desktop, and would make a good work or gaming computer. You wouldn't want to have to lug it around much, though.
- ❑ A **smaller, lightweight**, machine that's easier to carry around. If you wanted it for work, you'd probably still want a decent processor, but a smaller hard drive should be fine. A separate plug-in hard drive could be handy for storing big files at home that you didn't need to get at all the time.
- ❑ A **simple laptop or 2-in-1** that's mostly for browsing the web, emailing or watching videos on. It wouldn't need lots of space for apps, because most of what you do on it is online.

There are more details to decide on in the next section of the book, though, so keep reading...



# Desktops & Laptops

## Other Features

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*Once you know broadly what type of computer you're looking for, and how powerful you need it to be, there are a few extra features to think about.*

*But first – a great tip from us in the office...*

### ***Tips from the Office:***

*How buying a few separate bits can save you a fair bit of money*

If the PC or laptop that you really want (or that looks like the best value) is missing just one thing, you might be able to buy an add-on or adapter for that thing.

For example, if you need a laptop with a network port, check how much it would cost to buy a plug-in adapter with a cheaper laptop than to buy the next model laptop up, if that's the only thing the cheaper one is lacking.

You could do the same sort of thing if the laptop you want doesn't have a DVD drive, or only has a weeny bit of storage space.

It often works out cheaper to do it that way.

## Speakers

A lot of desktop PCs, some monitors and all laptops come with built-in speakers. They're very convenient (because they're just there), and you don't have to have separate speakers cluttering up your desk.



Separate speakers will almost certainly give you better sound quality, though. You can get really fancy speaker set-ups for PCs these days – for gaming or watching films – that are full surround sound.

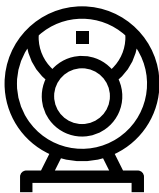
It's probably more important that the built-in speakers sound okay if you're going for a laptop – either one to carry around with you or just so you can tidy it away. Separate speakers would be very awkward then.

It's very hard to tell how good the sound quality is going to be just by reading a specification online, so if that's something that's important to you, you're best off going into a shop to try it out yourself. Some laptop speakers are surprisingly good now.

## Webcam and microphone

Again, these will almost always be built in to a laptop, but you might need to get separate ones for a desktop PC. It will say in the specification – either of your PC or monitor – if they're included.

You might not want to bother though, depending on what you want to use your computer for.



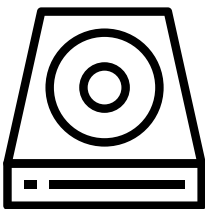
If you want to be able to make video calls using a service like Skype, then you'll need both a webcam and a microphone.

If you just want to be able to use voice commands with your computer (for accessibility purposes, or using Siri on a Mac), then all you need is the microphone.



If you don't want to do either of those, then you don't need to bother with either!

## CD/DVD drive



Pretty much all PCs and laptops used to come with a CD or DVD drive, but it's getting increasingly rare – particularly if you choose a laptop.

But there's a good reason for that. Most computer programs used to be sold on discs, so you'd need a disc drive to use them. That's not the case any more – virtually all new apps and programs can be downloaded to your machine straight from either a website or the built-in app store.

It's still worth having a disc drive if:

- You want to be able to use **old programs** that are still on disc.
- You want to be able to listen to **music from CDs**.

- You want to be able to **watch DVDs** on your computer.

If you've used writable CDs or DVDs to back up your computer in the past, there are other good alternatives now. You can back up files to "cloud storage" online, or buy various plug-in USB storage devices in lots of different sizes. Anything from a 2 GB (gigabyte) memory stick to a huge 10 TB (terabyte) portable hard drive (see page 31 for more about portable hard drives).

If you *do* decide you want a CD or DVD player, and can't find a suitable computer with one built in, you can buy separate, standalone disc drives that plug into your computer using a USB cable.

## Wi-fi

This isn't something you need to worry about if you're choosing a laptop – they all come with wi-fi built in.



Not all desktop computers do, though. You get a socket to plug in an "ethernet" cable instead – which is what you use for wired internet. And using a wire will generally give you a more stable internet connection.

But if your computer is going to be in a different room from your internet router, and you don't want to faff about stringing a cable halfway across the house, you might want to use wi-fi instead.

You can either shop around for a desktop model that

has built-in wi-fi (some do), or you can get a wi-fi adapter instead.

This is a little gadget that plugs into a USB socket on your machine – they come in various different shapes and sizes. You can pick one up from a computer shop like Currys, or order one online.

## Ports

Another thing that's well worth thinking about when you're choosing a computer is the number and types of socket or port that it has.

Now, in the olden days, you'd have had a mouse port, a keyboard port, a printer port and various other weird and wonderful ones for connecting specific bits of kit. Thankfully, most things connect to your computer using a standard USB plug these days.



### Make sure you've got enough USB ports

Having virtually everything connecting by USB makes everyone's life much simpler.

But it *does* mean you have to make sure you've got enough USB ports for all the things you're going to want to plug into it. It's a real pain in the neck having to keep unplugging things to free up a port for something else. I had to unplug my keyboard the other day so I could plug my printer in – hoping that I could do everything I needed to do with my mouse... not ideal!

Tower PCs tend to come with umpteen USB ports, but some of them can be a real fiddle to get to. They're on the back of the tower – so if you've got it tucked away under your desk, you don't want to be forever reaching around behind it to plug things in.

Thankfully, most towers have a couple either on the front or the top for things that you don't want to keep plugged in all the time.

With laptops, though, you need to be a bit more careful. Some of them are very stingy when it comes to USB ports – three is about your lot.

If you're choosing a separate monitor, you can get one with USB ports built in around the back and side. That can be really handy even if you've got plenty elsewhere, because they're generally easier to reach. So instead of having to faff about plugging USB cables into the back of your PC, you can just plug them into your monitor instead. To make them work, you need a special cable that plugs into one of your computer's USB ports at one end and the monitor at the other. If you're not sure whether you've got one or not, just ask in your local computer shop.

Another way to increase the number of USB ports you've got, is by using a USB hub. This is a bit like a multi-socket power adapter for your mains plugs. They plug into a USB port on your computer, and look something like this:





## Other ports that it's worth knowing about

As well as standard USB ports, you might want to check whether or not there are any other ports you'd like your new computer to have.

If you want to be able to connect a laptop to your TV or a separate monitor, you'll need an **HDMI socket**. Most laptops will have one, but not all – so it's worth checking.

Some desktops and laptops come with a **card-reader slot**, that you can put an SD card straight into (e.g. from a smartphone or digital camera). That can be useful if you're into photography. But you can get USB plug-versions of these if the model you're thinking of getting doesn't have one built in.

### *Decision Point*

This is your last decision point for now.

- If you want to choose a computer with all the ports and extra features you need **built in**, write yourself a list and start checking product specifications. (Or pop into your local PC shop with your list.)
- If you're happy to use **plug-in extras**, you can choose those later if you prefer.

You might want to pick a keyboard and mouse next – go to page 98 to find out more.



# Choosing a Tablet

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*The easiest way to describe a tablet is like a laptop with no keyboard or mouse – just the screen part. They're very light and thin, and they don't have much in the way of buttons and knobs. Instead of controlling your tablet with a keyboard and mouse, the screen is touch sensitive.*

*And there are a few things you might want to think about when you're choosing one...*

## **Apple, Google or Microsoft?**

If you've decided you want a tablet, your biggest decision is which system to go for – an Apple iPad, a Windows tablet or a tablet running Google's Android or ChromeOS...

### **Apple iPads**

The iPad is made by Apple and runs their own operating system, called iPadOS. They're towards the top end of the price range, as tablets go, but they are nice to use. The screens are sharp and clear, everything's laid out sensibly, and they all come with a decent built-in camera.



Then it starts to get a bit more complicated. For Windows and Android tablets, there's a whole range of different manufacturers, making tablets with all different shapes, sizes, qualities and price tags.

### Windows tablets



Confusingly, a lot of shops like Currys have stopped calling these tablets at all. Instead, they're lumped in with the laptops.

Often, they come with a detachable keyboard, and are called something like a "2-in-1" or a "hybrid" – see page 38 for more.

Windows tablets (or hybrids) run a lot of the same programs that you get on a PC, so if you're used to doing things on a Windows PC you won't have to learn a whole new system with a Windows tablet.

### Android tablets

If you're after a cheaper tablet, then Android is the way to go – you can pick up one that's roughly comparable to an iPad for around £300 or a cheaper one, down to below £100.



The cheap ones are fine for basic browsing the web, checking email and the like but they tend to be a bit less powerful and have less storage space – so if you're going to want to store a lot of videos or games on it, then you might want to look a bit further up the price range.

Another argument against the really cheap ones is that they're not as well-built, so they don't last as long as the better quality ones. Buying a more expensive tablet could save you money in the end, if you don't have to replace it as often (and it's less wasteful too).

### *Tips from the Office:*

*Why Kathryn chose a Samsung tablet for her mum*



A lot of the gadgets you buy these days just don't last very long – and I hate having to throw things away. It's wasteful and bad for the environment.

Generally, better quality brands like Apple and Samsung last longer than cheap alternatives. So when we were buying my mum a new tablet for Christmas, we chose a Samsung rather than one of the cheapy brands.

It's into its fourth year now and still going strong, so I think we made the right decision!

### **Other options**

Another option that's cheap for a different reason is the **Amazon Fire** tablet.

It uses the Android operating system, but Amazon have messed



about with it quite a bit.

The Fire's specifically designed to make it easy to get e-books from Amazon, download films from Amazon and so on (hence the price – they're making it easier for you to spend more money with them). They're incredibly cheap to buy – starting at about £65 – but they're much more limited than other tablets in terms of the apps you can put on them.



More recently, some manufacturers have stopped making Android tablets, and have switched to using Google's other operating system instead – **ChromeOS**.

Just like with Windows tablets, these don't tend to be called “tablets” at all. At least not in the big shops like Currys.

Instead, they're put together with Chromebooks, which also run ChromeOS (see page 35). In fact, they're often called something like a “Chromebook Tab”.

## How big a tablet do you want?

You can get tablets in all sorts of different sizes – from “paperback” size to ones that are more like a laptop.

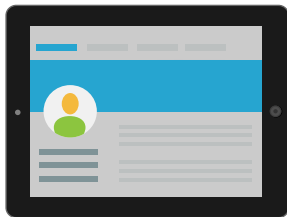
**The smallest tablets** have 7-8 inch screens – like the “iPad Mini” or the smaller version of the Samsung Galaxy tablet. Small tablets have advantages



and disadvantages:

- They're small and light, so they fit easily into a handbag or even a big coat pocket.
- They tend to be cheaper than the bigger models.
- Since they're about paperback size, they're good for reading ebooks on, or sitting and browsing the internet. You can easily hold one with one hand.
- But the smaller screen does make it harder to use for typing (so they're not ideal for working or typing emails on).
- You might also find the screen a bit small for watching films or TV – but they're not too bad if you're watching something on your own. You can just hold the tablet a bit closer to you!

At the other end of the range are the **laptop sized tablets** – these used to be called “pro” tablets, but that name's become a bit more general now. (More about that in a minute.) Again, there are advantages and disadvantages to having a big tablet:



- They're great for working on – that's what they were designed for, really. They can completely replace a traditional laptop – especially if you get a separate keyboard for it.
- They're nowhere near as portable as a smaller one, though. They're a bit big to carry around without

a proper laptop case.

- The big screen uses a lot of battery power, too, so they tend to need a big battery. That makes them heavy.
- They're much more expensive than smaller tablets.

In practice, a lot of tablets are somewhere in the middle.

Standard iPads and their Android competitors have between **9 and 10 inch screens**. And personally, I think that's the sweet spot.

At that size, the icons and keyboard keys are big enough to use properly, without tapping the wrong thing half the time. They're small and light enough to hold comfortably (although you'll probably want two hands). And they're big enough to see everything on the screen clearly.

Microsoft's own range – called the “Surface” – are all in the bigger size. You'll struggle to find a small Windows tablet made by anyone, because they're really designed for working on.

And Fire tablets are towards the smaller end – they don't make a really big laptop-sized one, because they're made more for reading and watching things.

## Basic or “Pro”?

A lot of tablet manufacturers have a basic range (like the standard iPad) and a fancier, more expensive range.

Apple call theirs the “Pro” range. Samsung have the “S” range – so they have one called the Galaxy Tab S9. Microsoft used to *only* have a fancy range – the Surface Pro – but they brought out a cheaper, more basic one called the Surface Go.

So what are you paying for in the fancier models?

- They tend to have better quality screens (although the basic ones are pretty good these days), and better speakers for playing sound.
- They’re faster and more powerful – so they can do more demanding things. That makes them better if you want to use one for work, fast gaming or video editing.
- They tend to be the bigger size – 10 inches and up.
- They usually have better-quality cameras, and fancier programming controlling them.

So really, they’re designed for professionals.

They’re also sometimes used by artists – you can draw directly on the screen with an active stylus (see page 108) and see your work crystal-clear on the high quality screen.

But for the average man-on-the-street, the basic ranges should be fine.





## Decision Point

So those are the main things to decide when you're looking for a tablet.

- If you know which **brand** or **operating system** you want – e.g. you know you want an iPad or a Samsung – your best bet is to go to their website and compare your options. They'll have different sizes of tablet and different “qualities” to choose from.
- If you don't mind which type of tablet you get, but you know you want (say) a 7-inch one, you're better off doing some **browsing**. Try Amazon or the Currys website, and filter by size to see all your options. Or pop into your local computer shop to see what they've got in that size.

Then you've got a few more details to decide on.



## Wi-fi or cellular?

Some tablet manufacturers let you choose between a standard “wi-fi” version of their tablet or a “wi-fi and cellular” version.

So, apart from being about £100 more expensive (for an iPad, anyway) what’s the difference?

### Wi-fi tablets connect to the internet like a laptop

If you go for a wi-fi only tablet, you can connect it to the internet using a wi-fi router in your house, or using free wi-fi when you’re out and about.

That’s just the same as you’d do it for a laptop.

### Wi-fi and cellular tablets are more like smartphones

As well as being able to connect to your wi-fi, cellular tablets come with what’s called a SIM card.



That lets them connect to the internet using the mobile phone network when they’re out of wi-fi range. If you want to use mobile internet, you pay for it separately, just like you would if you had a mobile phone contract.

There’s lots of information about mobile internet, and your options for paying for it, on pages 72-73.

It’s probably only worth getting a cellular tablet if you don’t also have a smartphone, and you need to be able to get onto the internet from anywhere.

## How much storage?

The storage space on your tablet is where it keeps all your apps, any music, photos or videos, ebooks, emails and so on. Some of the space will also be taken up by iPadOS, Android or Windows itself.

If you don't have much storage, you might find yourself having to delete things that are filling it up, every so often (possibly after saving them to some other device or to the "cloud"). And you're a bit limited in how many apps you can have on there at any one time.

That might not bother you – but if it will, it's worth thinking about before you buy.

You can add more storage to some tablets afterwards – for example some Android tablets let you add a "micro SD card" that gives you extra space. Most Apple devices (for example) can't be expanded, though.



SD cards have got a bit of a dubious reputation as well. They tend to work okay for storing things like music and photos, but I wouldn't try to run an app from one.

So if you think you might want to store a lot – particularly if you want to install lots of apps or games – I'd recommend getting a device with plenty of space to begin with (64 or 128GB should be enough).

## Battery life



I talked about battery life for laptops on page 42, and it's a similar situation with tablets.

You don't want one that's going to be running out of battery every couple of hours, but how big a deal battery life is to you depends on how you're going to be using it.

If you want to be able to use your tablet away from home for big chunks of the day without plugging it in, then it's worth making sure it's got a decent-sized battery.

The battery life in standby (when you're not using it) and in use are listed on the specification – see page 4 for more about product specifications.

## Screen quality

The quality of the tablet screen is one of the biggest differences between a cheap tablet and a more expensive one.

If you're going to be using your tablet a lot, it's probably worth spending a little more to get one that's easier on the eye. A blurry or low resolution screen can get quite hard to look at after a while. Apple iPads are known for their good quality screens, but if you're looking for a different tablet, head to your local Currys to have a look at some.

See page 23 for more about screen quality and resolution.

## Cameras

Nearly all tablets come with in-built cameras – one for taking photos and one facing you for taking selfies or making video calls.

Some manufacturers make a big thing about the quality of the cameras in their tablets – but whether it matters to you depends on how you use your tablet.

If you're going to want to use the cameras on your tablet, it's worth having a read of page 88 about smartphone cameras before you pick which model to buy.

### *Decision Point*

You should now be able to pin down the **model** of tablet you want.

More storage, better battery life, a clearer screen and high-quality cameras will all increase the cost of the tablet – so it's worth thinking about how important those things are to you.



# Smartphones

*Before we get started on choosing which smartphone you want, it's worth mentioning a few important things to think about first.*

## What comes first, device or contract?

Choosing a smartphone is a little trickier than choosing a PC, laptop or tablet. Not only do you need to choose a device, but you also need to choose a contract (or just a SIM card if you don't want to be tied into a contract – more on that later).



I guess it's a bit of a chicken-and-egg situation, what do you choose first?

You could end up going round in circles a few times before you decide exactly what it is you want, but I've tried to put things in a sensible order to make it a bit easier for you.

## First things first – smart or buttons?

When you're choosing a mobile phone, the first decision always used to be "smart" or "non-smart" (i.e. with buttons). But traditional mobile phones with buttons are becoming a bit of a rare breed.



There are a few companies, like Doro and Maxcom, that make simple phones for people who struggle to use a full-on smartphone. But smartphones definitely have their advantages:

- You can access emails and the web when you're out and about, without having to bring a laptop or tablet with you.
- There are other apps that might be useful when you're out, too, like Google Maps – handy if you get lost, or you can use it as a satnav in your car.
- They're great for taking photos and videos. And if you always have your mobile with you, you're never stuck thinking "I wish I had my camera with me...".
- If you're stuck somewhere unexpectedly you can read an e-book, listen to some music or play a game. I wish I'd had one back when I was stuck for over an hour at Lancaster railway station on my way home from a shopping trip.

The downside? Well, they still tend to be more expensive than a "non-smart" phone – although there are some pretty cheap models out there now. And they don't have actual buttons for the numbers, which some people don't like. And some people find them harder to use.

On the other hand, when it displays the numbers on screen, they tend to be bigger than conventional buttons, so there's an advantage there too.

## Decision Point

Right – after reading about the different types of phones, you should be at a point where you can make your first decision...

- Looking for a **smartphone**? Carry on reading.
- Looking for a **non-smartphone**? Your best bet is to either take a look at Doro's website [www.doro.com](http://www.doro.com) or go to a phone shop and tell them you're interested in phones with buttons and not a smartphone.



## Choosing a mobile network

The next thing to think about is which mobile network you want to go with. The main mobile phone networks in the UK are:

- EE
- Vodafone
- O2
- Three

There are also lots of other companies that provide



mobile phone contracts by “buying space” from one of the four main networks. For example:

- Tesco, Giffgaff, Virgin and Sky use the O2 network
- BT Mobile, Plusnet, and Co-op Mobile use the EE network
- Talkmobile, Voxi and Asda Mobile use the Vodafone network.

The main differences between the mobile network providers are:

### **1. Network coverage**

Not all networks cover all areas of the UK equally well. If you live in a town or a city you'll most likely be covered by more than one network, but if you're out in the sticks your choice might be quite limited. If you're thinking of using a particular network, make sure you check that you get mobile signal where you need it, e.g. in your house, where you work or down your local pub.

Ofcom have got a website where you can check coverage for various networks – [checker.ofcom.org.uk](http://checker.ofcom.org.uk) This isn't 100% accurate though, because things like hills and thick walls can make a difference. So if you've got a family member or friend who's on the network that you're considering using, ask them round for a sneaky cup of tea and a biscuit to check their mobile signal in various rooms of your house!

### **2. Contracts on offer**

Each provider offers different types of contract. Their pricing's usually quite similar, but there are subtle differences in what you get for your money – one

provider might have a contract that's perfect for you – so it's worth looking at all the options.

### 3. Phones on offer

If you want a new phone with your contract, you'll find that some models are only offered by certain providers. So if you have your heart set on a particular phone, check if the provider you're interested in offers it.

### 4. Wi-fi calling

Some networks offer a feature called “wi-fi calling”, which is where you can make calls and texts (and receive both too) using your wi-fi. It's great if you live somewhere that has rubbish mobile signal, but you can only use it if your phone supports this feature (not all can).

#### *Tips from the Office:*

##### *Why Robin uses Giffgaff*

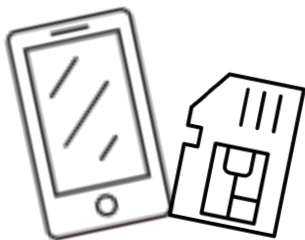
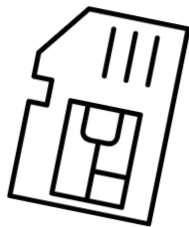
O2 is the best network for coverage in my area, but I use Giffgaff instead of O2 itself (Giffgaff actually uses O2's network so I'm getting the best coverage anyway). I prefer the customer service, and their simple and flexible monthly rolling plans are ideal for me.



## Do I choose a contract with a phone included or do I buy a phone separately?

Another big thing to think about is whether or not you want to go for a contract that includes a new phone or whether you want to buy a phone separately and go with a SIM-only contract.

SIM-only contracts are where you just get a SIM card that you put into a phone you already have, or one that you've bought separately.



“Phone included” is where you get a phone handset as well as a SIM card and pay for it all in one monthly payment. These tend to be more expensive (as you're paying for the cost of the phone as well as the cost of

making phone calls and sending texts etc.) but if you need a new phone, then a “phone included” contract is worth considering.

It can sometimes be cheaper to shop around to find the handset you want for the best price and then get a SIM-only contract, but you have to fork out for a new phone upfront.

## Decision Point

Right – after reading the last few pages, you should be at a point where you can make some decisions...

- If you want to choose your **phone** first, go to page 83.
- If you want to think about getting a **contract** first, go to page 71.
- If you're not sure, have a read through both sections and then make a decision. There's no right or wrong way of choosing which comes first.



# Choosing a Contract

.....

*Before I get into all the different types of contract, there are a few technical terms that you need to understand.*

## Minutes

“Minutes” are minutes of phone calls you make – so if you ring someone and talk for 12 minutes, you’ve used up 12 minutes of your call allowance. Your allowance of minutes doesn’t cover all phone calls though – premium rate numbers and overseas numbers are usually not included, for example. Your mobile phone contract should tell you what is and isn’t included, but if you’re in any doubt, you can always go into your local EE shop (or O2, Vodafone or whatever) and ask them.



## Texts

“Texts” are short typed messages that you can send from your phone. Again, your contract often includes an allowance for text messages – but this doesn’t cover all types of text message. For example, you might get the option to send a “read receipt” to confirm you’ve seen a text message, but that might not be included



in your allowance. And likewise, if you send pictures or attachments in text messages, those texts won't be included in your allowance and you'll be charged for those separately.

## Data (mobile internet)



“Mobile internet” is a type of mobile phone signal that gives you access to the internet through your mobile phone.

It's different from wi-fi – with wi-fi, the signal comes from a router, and you can't go too far from the router before you lose the signal.

Mobile internet is a mobile phone signal transmitted through mobile phone masts. So you can use mobile internet when you're out and about, rather than needing to be within range of a router (hence the name mobile internet!). You do still need to be in range of a mobile phone mast, but most of the country is covered, apart from some more rural areas. Because this is a mobile phone signal, you need to pay a mobile phone provider to use it.

You'll often hear mobile internet called 3G, 4G or 5G. Don't worry about the names too much – they're just different speeds of mobile internet. 5G is faster than 4G, which is faster than 3G. (The “G” stands for “Generation”, if you're interested.) UK network providers are switching off their 3G networks, and although 5G is available in most big towns and cities, only newer phones are able to use it. Luckily, most smartphones can use 4G, and it's widely available

across the UK. You'll probably only notice the difference between 4G and 5G when you're trying to do something that involves a lot of data transfer (for example, if you're watching a film on your phone, the faster the internet connection, the less chance of the film stopping and starting while you're watching it).

## **Contracts vs. PAYG (Pay As You Go)**

Which contract is best for you depends on how much you use your phone, and what you use it for – do you spend hours chatting on the phone but never use data, or do you send lots of text messages but rarely ever ring anyone?

There are so many options but if you talk to someone in a phone shop about the way you use your phone, they should be able to find one that's a good match for you. Do keep your wits about you, though, in case they try to talk you into paying for more than you need just because it's "a good deal".

If you hardly use your phone at all you might be better off with a Pay As You Go (PAYG) plan – where you buy "credit" for your phone instead of paying a monthly fee. I'm not saying PAYG is always better – it's more expensive per minute or per text, and very expensive for mobile data. But it's cheaper overall if you rarely use it, since there's no monthly fee. A good rule of thumb is this – if you're on PAYG and you find you're getting through £10 of credit a month you're definitely better off on a contract. One thing you should bear in mind is that you might lose your PAYG credit if you don't use your phone for a couple

of months.

Another thing worth bearing in mind is the cost of the phone itself. When you get a contract with a phone included you might well think you've bagged yourself a new phone for nothing, but you haven't really – you're just paying for it in monthly chunks. It's sort of like getting a loan to buy the phone, then repaying it over the length of your contract – usually over 2 years.

SIM-only contracts can be good after a “phone included” contract finishes, too, if you're still happy with your phone.

You usually aren't tied in to a “SIM-only” contract – they're often month by month. So if you find a better deal in the meantime, it's easy to switch.

### *Decision Point*

Right – it's time to make a decision whether you want to go for a contract or PAYG...

- If you're thinking about going for a contract, go to page 75.
- If you're thinking about going for PAYG (Pay As You Go), you can skip the next few pages and go to the section about choosing from the different Bundles and Add-ons (page 79).





## Monthly contracts

If you go for a contract rather than PAYG, you sign up to pay a regular monthly amount by direct debit.

You choose a monthly tariff based on the number of minutes, texts and data that you think you'll use. For example, you might pay £5 per month for 250 minutes, 1000 texts and 500MB of data, or you could pay £20 per month for 5000 minutes, unlimited texts and 5GB of data.

Many people find this way of billing very convenient, and your phone won't ever be cut off. But, if you go over the monthly limit of minutes, texts and data you've paid for, you'll often be charged extra... and that can mean some scarily big bills. That said, providers are obliged to let you "cap" your monthly bill if you request this, to stop you getting a nasty surprise – they let you know when you're close to your limit. You can still choose to pay more for extras on top of your limit, but it's your choice then – you can't do it by accident.

If you don't use up all the minutes, texts or data that you've paid for, you don't get any money back, though some network providers will let you carry over any unused data to the next month.

There are two main options with monthly contracts, which I'll explain now.

### **SIM-only contracts**

SIM-only contracts are where you just get a SIM card that you put into a phone you already have, or have bought separately. These are usually on a rolling

30-day contract, although some last for 12 months. There are various options for the amount of minutes, texts and data you get included with that.

If you already have a phone that you're happy to carry on using, a SIM-only contract is usually much cheaper than contracts that include a new phone. You need to make sure you get a SIM card that will fit in your phone though, as there are different sizes (standard, micro and nano). Older phones tend to use standard SIM cards and newer ones are either micro or nano SIMs. Some even have "eSIMs" which are built in to the phone itself, but you can usually add a secondary micro or nano SIM to them as well.

One thing to watch out for is that some phones are "locked" to a particular network – for example if your phone was originally an EE phone, it might be "locked" to the EE network, so you wouldn't be able to use a Vodafone SIM card in it. Most network providers will unlock the phone for you but you might have to pay a small fee.

### **"Phone included" contracts**

"Phone included" is where you get a phone handset as well as a SIM card (again, with various minutes, texts and data options). Even though the phone is "included" in the contract, it isn't free – you just pay for the cost of the phone handset over the term of the contract by paying a higher monthly fee than if it was SIM-only. Most contracts of this type last for 12, 24 or 36 months.

You can usually upgrade your phone to the latest

model at some point during your contract, so you might want to have that option (but bear in mind that ties you into a new contract). If you use your phone a lot, then chances are it might not last for more than a few years. When you're coming close to the end of your contract, your network provider will contact you with some offers to entice you to upgrade, but that then ties you into another contract.

If you're happy with your phone and it's still working fine, then you could choose to switch to a SIM-only contract. But bear in mind that the older the phone gets, the more likely it won't update to the newest operating system (the software that runs the phone – more on this on pages 83-84) and some newer apps might not work on older operating systems.

### *Tips from the Office:*

*Why Jess upgrades her phone every 2 years...*

I'm on a "phone-included" contract and every 2 years I say to myself that I'm going to keep my phone and switch to a SIM-only contract to save some money. But every time, I upgrade to a new phone because my current phone seems to go downhill near the end of my contract.

I must admit, though – I do get drawn into the shiny new phones that they offer, plus the cameras keep getting better which means better quality photos of my dogs!



## How many minutes, texts and data do I need?

The simplest way to work this out is to do a “back of the envelope” job – tot up how much you use your phone per day, then times it by 30 to get your monthly average. So if you spend 20 minutes a day catching up with your daughter on the phone, send 10 texts and spend about an hour a day checking and replying to emails you’ll use 600 minutes, 300 texts and around 50MB of data. And if you’re worried that won’t be quite enough, you can always add, say, 10% for contingency.

Trying to estimate how much data you’ll need is a bit trickier than working out how many minutes and texts you need as different activities use different amounts of data.

Here’s a rough idea of how much data different activities use:

<b>Reading a webpage</b>	0.1MB per page
<b>Reading an email</b>	0.1MB per email
<b>Using Facebook</b>	20MB per hour
<b>Downloading a song</b>	5MB per track
<b>Downloading a book</b>	0.5MB per book
<b>Downloading an app</b>	30MB per app
<b>Watching a video</b>	60MB per hour

Bear in mind these are rough estimates, the actual amount can vary quite a lot. For example, some apps are just a couple of megabytes but some are huge (e.g.

100MB). And webpages that include a lot of photos use more data than those that are just text. The large number of photos is also why social media apps use quite a lot of data. What quality you watch a video at also makes a big difference, but in general videos use an awful lot of data.

Watching videos or listening to songs that have already been downloaded onto your phone doesn't use any data. The same is true for books you've already downloaded – it's the downloading part, where the information is sent over the internet to your phone, that uses data.

I guess the main thing to remember is try not to let a salesperson push you into paying for more than you'll use. You can use free wi-fi in a lot of places these days, so you'll only need to use mobile data when you're out of wi-fi range. So you might not need as much data as they reckon!

## **Bundles, add-ons, rewards etc.**

To complicate things even more, most mobile phone providers offer variations on both the standard monthly contracts and the PAYG tariffs, so it's worth comparing what different network providers can offer you (see page 66 for a re-cap on the different mobile network providers). Here are a few examples:

- Some PAYG tariffs (see page 73) give you rewards such as “top up £10 and get 1GB of free data”. There's usually a time limit, often you have to use the reward within 30 days.

- Some let you pay a one-off amount for a chunk of extra minutes/data/texts. For example, “£2 for 1GB of data” or “£10 for 500 minutes of international phone calls”. These offers are called all sorts of things by different companies – bundles, packs, boosts, bolt-ons etc. And you can usually get them for PAYG as well as monthly contracts.
- Some providers offer to “roll-over” unused minutes, text and data from one month to the next.
- Some even offer a free tablet or TV to try and entice you to take up a contract.
- You’ll also find offers unrelated to phones, that are only available to their mobile customers, such as cheap cinema tickets, or early access to concert tickets.



Some of these options are really worth it – but not for everyone, because it depends entirely on what you use your phone for.

For example, international phone calls can work out pretty expensive, whatever your contract or PAYG setup is – so if that’s something you do a lot, it’s worth finding out if your mobile phone provider offers a bundle of cheaper minutes for international phone calls. It could save you quite a lot of money.

And if you only use your phone for mobile data and hardly ever use it for minutes or texts, you might

want to have a very basic contract that doesn't include much in the way of minutes or texts, but buy a "data bundle" that gives you a bigger data allowance for a cheaper rate. You'd need to compare the price of the basic contract plus the bundle with just getting a more expensive contract in the first place.

I also know someone who chooses a phone contract that gives them cheap cinema tickets. Because they go to the cinema a lot, it really works out good value for them. But that offer wouldn't make any difference to me because I only go to the cinema about twice a year!



One thing I would say, though, is that if you have a contract, it's usually best to choose something that covers what you need it for in a **typical month** – because you have to pay for that contract every month till it ends, and that's often 2 years.

If you have the occasional month when you need to, say, make an extra load of international calls, or use an extra 5GB of data, you can buy extra for those months. Even if the bundle or bolt-on works out more expensive per call/per GB/per text than if they'd been included in your contract, it still might work out cheaper than paying an extra £10 on your contract for the full 2 years.

## Decision Point

So, that's everything about contracts...

- If you're ready to choose a contract or a PAYG deal, pop along to your local phone shop to see what they have that would suit you. Or you can go to the network's websites instead if you prefer (just type their names into Google).
- If you feel like you want to choose your phone first, carry on reading.





# Choosing a Phone

*If you've decided you want a smartphone, your biggest decision is which system to go for – an iPhone or a phone running Google's Android...*

## **iPhone or Android phone**

The iPhone is made by Apple and runs their own operating system, called iOS. They've usually got a few models for sale at any one time (the most recent one and a few older ones, too). They're towards the top end of the price range, as phones go, but they are nice to use.



If you're after a cheaper phone, then Android is the way to go – although there's a big range of prices from different brands. The cheap ones tend to be a bit less powerful, have poorer screens and have less storage space – so if you're going to use your phone a lot, you might want to look a bit further up the price range.



You pay a lot for brand new models that include fancy technology (called “flagship” phones), but brands like Samsung and Apple always have cheaper models

for sale as well. There's no need to splash out on the newest fanciest thing if you're not going to use all the features on it, it'd be like spending thousands of pounds on an all-singing, all-dancing smartwatch, when you're just going to use it to tell the time!

You can do pretty much the same thing on both operating systems, so I wouldn't worry too much about that when you're deciding.

They're both good systems that work well and are designed to be generally pretty easy to use. The main thing I'd say is if you've used one operating system before, it's probably simpler to stick with that rather than learning something different.

### *Tips from the Office:*

*Why Laura chose to switch from iPhone to Android...*



I've had an iPhone for the past 6 years or so, but due to the ever increasing cost of iPhones, I decided to switch to an Android phone. It took a while to get used to it, and I still can't decide if I like Android phones better than iPhones, but I'm happy with my phone for now.

## Size and weight

Smartphones are generally getting bigger, so that it's easier to see things and type on the screen. That's really handy, but there are some downsides to big phones, too.

The most obvious one is that they're just harder to fit in a pocket! I always used to carry my mobile in a trouser pocket, but the one I've got now is just a bit big for that. Here are a few of the Android smartphones we have in the office:



The phone on the right is the oldest and the phone on the left is the newest.

A bigger phone is generally heavier and more awkward to hold to your ear, too. And there are other, less obvious, issues with a big screen. A bigger screen generally uses more power than a smaller one, so you either need to have a bigger battery or charge the battery more often. You also end up with a bigger piece of glass on the front of your phone, which makes the whole thing a bit more fragile.

Having a bigger screen on your phone can be really useful though, particularly if you want to be able to

type on it easily. On my old phone, I always used to turn it sideways to make the keys big enough to type on – but that meant I couldn't see what was on the rest of the screen, it was nearly all keyboard! I don't have to do that on my new phone with the bigger screen – I can just hold it upright while I type.

So, as usual, it's horses for courses. If you want to be able to fit the phone in your pocket, you might want to look around for a smaller model. But bigger screens are generally much easier to use, particularly if you're a bit cack handed like me!

### *Tips from the Office:*

*Why Claire curses at her phone...*



I have an iPhone that I got 3 years ago and compared to some of the phones we use in the office (e.g. an iPhone XR), the screen is tiny!

I do tap on the wrong thing on the screen quite a lot and on some websites, I have to zoom in to read the text, but I do like that my phone fits easily into my jacket pocket!

## Battery life

Battery life can be pretty important when it comes to picking a phone – you don't want it to run out while you're in the middle of a phone call.



Most phone batteries will last a few days on standby, but if you're going to be using your phone a lot during the day it's worth looking for one that holds more power.

The size of a battery is measured in mAh (milliamp hours), and the best ones for battery life are up to 6500 mAh at the moment. The only downside to having a phone with a bigger battery is that it will most likely be a bit heavier, but it seems a small compromise to make if your phone's going to keep going all day off one charge.

## Storage space

Storage space is often what separates the cheaper phones from the more pricey options. Cheap Android phones don't usually come with very much storage space at all, and that can be a problem if you want to put a lot of apps on them.

You can't add more storage to an iPhone after you've bought it, so it's worth thinking carefully about how much you need when you buy it.

Some Android phones take SD cards that let you add more storage space later. But SD cards can be a bit unreliable, so if you think you're going to want it, my

advice would be to spend a bit extra and get a decent amount of inbuilt storage.

## Cameras – how many and how good?

Cameras on mobile phones seem to be getting a bit daft these days – some phones have got as many as five cameras! Do you really need that many?



Well, the answer is (as always) it depends what you want to use your phone's camera for. The extra cameras are usually for focusing at different points – so there might be one that's set to take long distance shots (wide angle), one set to the sort of distance you'd use for taking a picture of a person, and a close up one (zoom).

That makes it a lot easier for you to take pictures that are properly in focus, and your phone can use fancy tricks to combine information from the various different cameras. So you can take pictures where just one bit's in focus and everything else is blurry, or where every part of the picture is in perfect focus or has exactly the right lighting.

Basically, they just make it easy for ordinary people on their phones to get fancy, professional-looking pictures. If you want that, then it's worth paying extra for more and better cameras. If not, you don't have to worry about them. Even bottom-of-the-range phone cameras are pretty good these days if all you're after is holiday snaps.

## And finally...

I've gone through some of the main points with you and by now you should have a pretty good idea of what sort of phone you want to go for.

But before you set your heart on a particular phone, if you're thinking of getting a phone included with a contract, not all phones are available on all contracts (see page 75 for more about contracts).

If you're happy to choose a different contract to get the phone you want, just make sure you weigh up the different costs to see if it's really worth it.

### *Decision Point*

Oh – decisions, decisions...

- If you're ready to choose your phone, pop along to your local phone shop (or visit their website) to see which model takes your fancy.
- If you still need to think about what contract to choose, go back to page 71.



# Choosing a Printer

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*If you're wanting to print something from a computer, tablet or smartphone, you'll need a printer. Over the next few pages I'll help you decide what sort of printer you'll need.*

## **Inkjet or laserjet?**

There are two different types of printer – inkjet and laserjet. They both look very similar but they work very differently.

Inkjet printers tend to be cheaper than laserjet printers. They work by squirting fine jets of ink onto the paper. They're slightly smaller and are traditionally used for home printing.



Inkjets are suitable for printing text documents but they can print high quality photos as well.

They tend to be more expensive to run as the cartridges can be quite expensive – so they're mostly used for low volume printing. The ink in the cartridges can dry up if the printer's not used for a long time, meaning you might have to replace them more often.



Laserjet printers are slightly more expensive upfront but tend to be cheaper in the long run. They work in much the same way as a photocopier, using an electrical charge to attract powdered toner to the paper in the right places.

They have faster print speeds and they're ideal for high volume printing. They're mostly used in offices as they give very sharp, professional results.

The cheaper ones are usually black and white only, but colour ones are getting cheaper (but they're still quite pricey). The toner doesn't dry up, so even if you don't use the printer for a while, it'll still print when you next need it to.

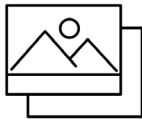
### **If you print less than 10 pages a week...**

It depends on what you're printing, really. Laser printers aren't so good for printing photos – and colour laser printers are quite expensive. But they don't dry out because the “ink” is a powder rather than a liquid, so you could use it as and when you needed to, without worrying about it not working properly.

On the other hand, inkjet printers are cheaper and they're good for printing photos. If you don't use the printer for a while though, the ink will have dried up and you'll have to replace the cartridges.

I guess it all comes down to what you'll be printing, how often you'll be using the printer and how much you want to spend upfront and in the long run.

If the only thing you want your printer for is photos, you can get printers that are specially designed to do just that. They'll print all the way to the edge of the paper if you want them to – just like a professional print. And if you use the right paper and print settings, you can get some really good results.



### *Decision Point*

So you should now be able to decide what sort of printer you'll need...

- I'm looking for a black and white laserjet printer.
- I'm looking for a colour laserjet printer.
- I'm looking for a colour inkjet printer.



### **Wireless or not?**

I should also talk about how you connect to the printer.

Nowadays a lot of people use wi-fi (wireless) printers, where you don't have to plug the computer, tablet or whatever into it – it connects via your home wi-fi.



It's convenient, but in my experience most of the problems people have with printers are from using wi-fi.

If you're using a PC or laptop, I'd always recommend plugging the printer into the computer. You can do this even with wi-fi printers, using a USB cable. You'll most likely get a cable with your printer but if you don't, you can pick one up from a computer shop for a couple of pounds. Of course, you don't have to leave it plugged in – only when you want to use it.

If you've already got a wi-fi printer and are using it happily, then that's fine, no need to change. But if you're getting a new one, my advice is to make sure you can just plug it in – and it'll probably be easier to do it that way.



What about if you want to print from a tablet or mobile phone? Then you'll need to use a wi-fi printer as there's usually nowhere to plug the printer into the tablet or phone. But I have to admit my usual response if someone asks me "How should I print from my tablet?" is "Do you have to?"

It's possible of course, but tends to be more hit-and-miss. So if you have a PC or laptop, I'd always print from that. If you only have a tablet, you can't do that, obviously – in which case make sure the printer you get is a wi-fi one.

More specifically, if you want to print from an iPad or iPhone, you need to get the right type of wireless

printer. Apple devices use a built-in feature called AirPrint to send documents to the printer, and that only works with printers that are “AirPrint compatible” – most new printers are these days, but make sure you check in the shop before you buy one.



**AirPrint**

If you've got an Android phone or tablet, any wireless printer should be fine. But it's worth knowing that most printers have an app that you can download from your app store to make them work better. So if you're having trouble, check the printer box or instructions (if you were lucky enough to get any) and see if it mentions an app – in which case, try downloading it and you may find you can suddenly print OK!

### *Decision Point*

You should now be able to make a decision about how you want to connect to your printer..

- I'm happy to connect to my printer with a cable.
- I want to be able to connect wirelessly to my printer, so I need a wi-fi printer.
- I want to be able to connect my iPad/iPhone to my printer so I need a printer that's compatible with AirPrint.



## Tips from the Office:

*Why printers are Mike's worst nightmare...*



As well as having to set up all the printers in our office, I also have to help our Inner Circle members with their printers. One of the most common problems is when wireless printers won't connect properly – they usually say they're offline or something similar. And my favourite tip to get it back online again is to switch it off, wait a few minutes and then switch it back on again and (hopefully) that should do the trick!

## Choosing the right paper

This might sound a bit daft, but choosing the right paper can be just as important as choosing the right printer.

If you're just printing for your own personal use, say you're printing out a copy of your travel insurance before you go on holiday, you don't need to use the best quality paper. You'll be absolutely fine just using plain A4 copier paper. But say you're wanting to print out some



photos, you can buy special photo paper to make them look like they've been professionally printed. And to get them to print out exactly how you want them, you can change your printer's settings so it knows you're using special photo paper.

You can also get thicker paper for printing things like wedding invitations or birthday cards on. You'll most likely have to change some settings on your printer to get the best result, but it's worth it to be able to print your own personalised cards etc.

## **Cheap printers and ink cartridges**

You sometimes see really cheap colour printers – in some cases cheaper than a set of ink cartridges for them, even though they come with cartridges. What's going on?

Well, the printer companies usually make the profit on the cartridges, not on the printer. So they're happy to sell you a cheap printer in order to get you using their cartridges.

But could you just buy a new one each time, since they include ink with them? Well, you could, but the cartridges that come with them are usually "starter" versions that don't actually have much ink in them. So they won't last as long as normal cartridges.

What about buying "compatible" cartridges instead of the expensive ones made by the manufacturer?

Well, it can work. But all too often I've found that compatible ones aren't all that compatible... or they'll

start off working and then stop soon after.

It's not that they're badly made – it's that the printer makers deliberately design printers to not work with any but their own cartridges, so if the printer realises it's not got an official cartridge, it might stop working. Not all printers work like that, but generally (to save the hassle and doubt) I stick to official cartridges.

Another thing on the cheap printers: you'll often find that the cheaper printers cost more in ink. That's fine if you won't be printing much, but if you'll print a lot, it can be cheaper to get a more expensive printer that costs less in ink. It's not as simple as how much an ink cartridge for it costs as they don't all print the same amount – you have to look at how many pages each cartridge will last for.

## **Ink tank printers**

Some of the more expensive models of inkjet printers come with an “ink tank”. Instead of using cartridges, you just fill up the tank with ink instead. The tanks hold a lot more ink than a single cartridge, so you don't have to mess about replacing the ink all the time, and they're better for the environment as there's less waste. The cost of the ink works out cheaper per page too, and they usually come supplied with a full tank.

However, the print quality can be a bit lower than with cartridges, and the ink dries out if you don't use it. So it's only worth getting one of these if you do a lot of printing, but would prefer an inkjet to a laserjet printer.

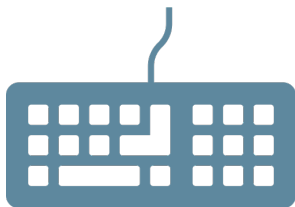
# Keyboards, Mice and Styluses

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*Over the next few pages I'll help you decide what sort of keyboard, mouse or stylus you'll need.*

## Keyboards

Keyboards are a vital piece of equipment for any device. You need one to be able to type something.



For desktop PCs you need a separate one that either plugs into your machine or that connects to it via a little USB receiver you plug in or via Bluetooth.

Laptops have one attached to them already, but some people prefer to have a separate one as well.

Tablets and smartphones have an on-screen keyboard that you use, but you can also get separate keyboards for these – they usually connect via Bluetooth.

## Wireless vs. wired

The two main types of keyboard that you'll find are the ones with a cable that you plug into your device (wired keyboard) or ones that don't have any cables at all (wireless keyboard).



There are pros and cons to both of them, let's look at **wired keyboards** first:

### Pros

- they don't need batteries to work,
- they tend to be cheaper,
- the connection is always stable, so they work reliably.

### Cons

- the cable can be a trip hazard, it's a bit messy and it can get in the way,
- the keyboard can't be moved away from the PC.

And now **wireless keyboards**:

### Pros

- they're portable so you don't have to be sat at your desk to type,
- there's no cable to get in the way.

### Cons

- there's sometimes a bit of a delay when you're typing,
- they run on batteries so they either need to be plugged in to charge or the batteries need replacing every so often.

I've always used a wired keyboard, just because I find them more practical – I never need to use one away from my desk. They're also more reliable and I don't have to worry about it running out of battery half way through a sentence.

## Ergonomic keyboards

If you use a computer a lot, you might get a bit uncomfortable using an ordinary keyboard. There are ergonomic keyboards that can make typing more comfortable for you and reduce your risk of getting RSI (repetitive strain injury).

Usually ergonomic keyboards are in a V shape so your hands stay in line with the



rest of your arm, making it feel a bit more natural.

They do take a bit of getting used to, and they're only really useful if you type using two hands.

## Keyboards for tablets

Tablets have an on-screen keyboard that you can use, but depending on how you use your tablet, you might benefit from having a separate keyboard.



You can usually get a case that has a keyboard attached to it and you connect the keyboard to the tablet using Bluetooth.

The downside of having a keyboard with your tablet is

it makes it a bit more bulky, so it's not as portable and lightweight.

The size of the keys on the keyboard are much smaller than on a PC or laptop keyboard as they have to shrink them down to the same size as your tablet. You might end up hitting the wrong key whilst you're typing.

### *Decision Point*

You should now be able to decide if you want a separate keyboard (or not). And what sort of keyboard you'll need for your device...

- I need a keyboard – have a look in your local computer shop (or on their website) to see if they have any you'll like.
- I want to just use the on-screen keyboard (for tablets and phones) or the keyboard that came with my device.



## Mice

...and no I don't mean the furry type, I mean the one that makes the pointer move on your PC or laptop.

Basic mice have two buttons, a left mouse button and a right mouse button. But some mice have extra buttons, wheels, cables, no cable or they might look completely different and have a rollerball or a joystick on them.

Like keyboards, there are lots of different options that you can choose from, the main one being wired or wireless.



### Wired vs. wireless

If you go for a wired mouse, you'll have a cable that runs from the mouse to your PC or laptop, which could get in the way and make your desk look a bit messy. But they tend to be faster than wireless mice and they don't need batteries for them to work. They are slightly cheaper than wireless mice and you don't get any interference from other devices.

You don't get the freedom of using the mouse further away from your PC though.

With a wireless mouse, because it works by transmitting a signal from the mouse to the receiver (which is usually plugged into a USB port on the PC or laptop), you



can get interference from other devices (like a wireless speaker or a wireless keyboard). You might also experience a bit of a delay sometimes when using a wireless mouse as it has to send the signal to the receiver.

## Ergonomic mice



There are also ergonomic mice that have been designed to take the strain off your wrist by changing the angle of the buttons. This keeps your hand in line with your arm. They look a bit funny, a bit like a normal mouse on it's side, but they can feel more comfortable to use.

## Wheel or no wheel?

Most mice have a little wheel in between the left and the right mouse buttons. This lets you scroll up and down on the screen without having to use the scroll bar at the side of the page you're on.

I use the wheel on my mouse all the time as it gets me to the right place on my screen a lot quicker.



You can also use the wheel as a button – it sounds strange but it's true! If you press the wheel down when the cursor is hovering over a link on a webpage, it opens that link in a new tab.

## Alternatives to traditional mice

As well as the different features I've mentioned over the past few pages, you can also get mice that look nothing like traditional mice.

**Trackball/rollerball** mice have been designed so you don't have to move the mouse to move the pointer on your PC or laptop. Instead, you use your finger, thumb or the palm of your hand to roll a ball on the mouse. This then moves the pointer to where you want it to be. It still has the left and right mouse buttons, but they're on the side of the mouse.



One of the main advantages of using a trackball/rollerball mouse is that you can use it on any surface. It doesn't have to be a smooth surface (like you need for a normal mouse to work), you can use it on the arm of your favourite armchair if you wanted to.

These type of mice are quite tricky to use at first, and they also need quite a bit of cleaning as the ball can get a bit dirty. Some also have tremor suppressing features to make it easier to click on the right thing.

Another type of mouse that might suit you better is a **touchpad** mouse. These are mostly built in to laptops, but you can buy one that you plug into your PC if you prefer using that type of mouse. They have a rectangular-shaped flat surface with sensors underneath that can move the pointer on the screen as you move your finger across it. Most of them also have two buttons at the bottom, one to left click and one to right click, but some can detect a click anywhere on the touchpad.



The main advantage of using a touchpad is you don't have to physically move anything, you just have to move your finger over it to make the pointer move.

One of the least known types of mouse is the **joystick-style** mouse (also known as a vertical mouse). This type of mouse reduces any wrist or shoulder pain and you can often get them in different sizes to fit the size of your hand.



You move the joystick in the direction that you want the pointer on your screen to move. I must admit they do look like a controller that you'd find in an aeroplane cockpit, and I guess you could say they do work in a similar way.

## Tips from the Office:

*What type of mouse is most popular in our office?*



We use a mixture of traditional mice and ergonomic mice, with 5 people opting for a traditional one and 7 people choosing an ergonomic one.

The people who are using a traditional mouse have said that they've always used one so they've stuck with it.

The people who are using an ergonomic one have said that they tried using one and it felt more comfortable for them, so they started using one instead of a normal one.



## Choosing a stylus

A stylus is a special pen with a rubber end that you can use to operate a touch-screen device. A lot of people find them more comfortable



to use and if you struggle with accuracy using your fingers, a stylus might be just the thing for you.

An ordinary stylus can be used on any touch-screen device, which means you can use the same stylus on a tablet and a smartphone if you have both. Don't be tempted to use a make-shift stylus though (like the end of a pen or pencil) as these can really damage your screen.

One of the advantages of using a stylus instead of your finger is that you don't get fingerprints all over your device's screen. This keeps your screen smudge-free and easier to see what's on it.

Some styluses are much better quality than others, so if you're wanting one that will last you a long time, then paying a bit extra will be worth it. You can also get different sized styluses so you can choose one that feels more comfortable to hold. You might be able to find one that fits in your tablet case (more on page 110 about cases) or even one that you can put on a keyring so you can have it with you wherever you go.

If you're thinking of getting a stylus and you just want it for general use, like typing or tapping on things,

then you're best using an ordinary stylus. If you're wanting to use a stylus to draw something on your tablet, then you could choose a stylus with a finer tip.

## Active styluses

Active styluses are quite different to ordinary styluses. They tend to



have a smaller point at the end (so they look more like a pen or a pencil) but they are more likely to be a bit bigger and slightly heavier than ordinary styluses. This is because most of them have electrical components in them and some have buttons on them that have different functions.

Active styluses are mainly used for writing and drawing on a tablet but they only work on certain compatible devices.

Apple has created a device called the Apple Pencil which works with their newer range of iPads. They're quite expensive but they do have quite a few different features, such as pressure sensors that can change the thickness of the line you're drawing.

Other manufacturers have made active styluses that are compatible with many different makes and models of tablets. They do vary a lot in price and the more expensive ones have more features.

Some smartphones come with an active stylus, such as the Samsung Galaxy Note range. These can be used as remote controls for the camera app on the phone, and

they can even control what music you're listening to.

You can also get an active stylus for some 2-in-1 laptops (that are also a touch-screen tablet) that work in the same way as a mouse would. You can move the pointer around the screen without actually touching the screen at all.

### *Tips from the Office:*

*Jess uses a stylus when she's playing games on her phone...*



I love playing games on my phone, my current favourite is Nonogram which is a picture logic puzzle where cells in a grid must be coloured or left blank according to numbers at the side of the grid to reveal a hidden picture.

Sometimes I lose a life by tapping on the wrong square by accident. I've found that using a stylus is easier and less clumsy and now the only time I lose a life is if one of the dogs nudges my arm (usually wanting a treat)!

# Cases and Screen Protectors

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*If you've spent quite a bit of money on a gadget, you'll want to keep it in good working order and avoid damaging it. Thankfully you can get cases for almost any device, and maybe even a screen protector too if you think you'll need one.*

## Choosing a case for your device

Once you've chosen the tablet or smartphone you want, it's a really good idea to get a case for it. If you're carrying it around a lot, it's easy to accidentally drop it, or scratch the screen against something else in your pocket or bag.

There are lots of different types of case, though, and it's worth choosing the right type for you.

For example you might want a case that closes, like a wallet, to protect the screen. They can also double up as a stand too. They tend to be quite bulky though, and they're not usually all that shock-proof.



You can also get rubbery ones that go round the back

and sides of the phone or tablet. They don't close, but they come round high enough to give the screen a bit of protection, and they're great at protecting the device from knocks if you drop it.

You can also get hard cases that protect the back of the tablet or phone but don't really do much for the screen. They're better than nothing, and they're *much* slimmer – so they're good if you keep your phone in a trouser pocket.

Whichever type you decide on, you'll need to get one that's been made specifically for your model of phone or tablet so that all the holes in the case match up exactly with the camera, speakers, headphone socket etc.

They tend to be pretty cheap – I think my phone case cost me around £9! You can also get special bundle deals where you'll get a screen protector (see below) and a stylus (see page 107) included with the case.

## Screen protectors

You can get a screen protector for pretty much any device these days, but do you really need one?

If you're a little bit clumsy (I know I certainly am) or you use your device a lot when you're out and about, then it's definitely worth putting a screen protector on your device. If you've got a case on your phone that closes like a wallet, then you probably don't need an extra screen protector since the case is acting as one already.

More **expensive** models of phone and tablet have toughened glass, so they don't scratch as easily as older or cheaper models do. But if it's a really expensive phone or tablet you might want to add a protector in case you drop it, to reduce the chances of smashing the screen.

Screen protectors are generally made for the specific make and model of your tablet or smartphone, so you'll need to make sure that the one you get is compatible for your device. You can get generic ones, but some of them won't cover all the screen or they might be too big for your device.

### **Film vs glass**

You can get two different types of screen protectors, film ones and glass ones. Film ones protect the screen against scratches and minor bumps, but they won't protect it if your device accidentally falls out of your pocket onto the pavement.

A glass screen protector *might* stop your screen from breaking, depending on how high your device has been dropped from or how hard the surface is that it's fallen onto, but they can't 100% guarantee this. The way a glass screen protector works is that it absorbs the impact of a fall and it breaks instead of your screen, so you only have to replace the screen protector (costing around £4) instead of the actual screen (which can cost between £50-£100).

So a screen protector could save you from having to fork out to replace your device's screen, but I should also mention how fiddly they are to put on.

You'd think it was a simple case of peeling one side off and sticking it to your screen – but most of the time you end up with air bubbles underneath that can get rather annoying. Some screen protectors come with a guide that you can use to make sure they're in the right place, but most of them you just have to wing it and hope for the best!

### *Tips from the Office:*

*Why Jade didn't need to buy a screen protector...*

When I got my Samsung Galaxy S10+ phone, it already had a screen protector on it so I didn't need to buy a separate one. It's pretty good at stopping the screen getting scratched and because it was already on when I got the phone, I didn't have to faff about trying to put it on.



# Miscellaneous Tech

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*I've gone through the main bits of tech that you'll most likely want but there are other bits and bobs that you might not need straight away, but they could come in handy further down the line.*

## Battery and Power Gadgets

### Battery packs/power banks

If you're heading off on a camping trip and you won't have a plug socket nearby – or your train's been delayed and your phone's run out of battery – then having a battery pack or a power bank could really help you out.



You charge them up when you're at home and then when you're out and about and you need to charge your device, you just plug it into the battery pack and it'll charge your device for you.

You can get them in lots of different colours and sizes and also different capacities. For example, how much



charge a battery pack can hold is measured in mAh (milliamp hour), and a battery pack with 20 000 mAh can charge a smartphone around 4-7 times (depending on the size of the battery in the smartphone).

The more expensive battery packs can charge your device more times (and usually a bit quicker) than the less expensive ones. They'll also charge quicker themselves too!

You can get them in lots of different shops nowadays, including some supermarkets too, so if you're interested, have a look when you next pop to your local shop.

### **Solar-powered chargers**

These are a very similar idea to the battery packs I was just talking about – but rather than charging them up off the mains, you just put them in the sun to charge up.

They're brilliant if you're going to be away from mains power for quite a while – say a two-week camping trip.

Again, they come in different sizes and capacities – with the bigger ones being more expensive to buy, but holding more charge.

### **USB charging stations**

You normally charge up a phone or tablet (and some other devices) by plugging a USB cable into a special mains plug.

If you have several devices that you want to be able to charge up at once from a single mains socket, you can get special plugs with a whole load of USB sockets in them.

These usually charge your devices a bit more slowly than the plug that came with them, but if you're short on plug sockets, they can be handy.

### **Battery back-up power supplies**

These are used a lot in businesses, where it's a problem if you suddenly have electrical equipment turning off, but they can be handy at home as well (although they *are* quite expensive).

They often look like big, chunky multi-plug power adapters – usually with 4 or 6 sockets on them. And they've got a battery pack built in. The idea is that if you have a power cut, anything that's plugged into it can carry on running off the battery power long enough for you to save whatever you're doing and shut everything down properly. They're also called “uninterruptable power supplies”.

#### ***Tips from the Office:***

*Why Mike swears by battery back-ups...*



Just about everything in the office is on battery back-up – because I'm a bit paranoid like that.

But I've also got one at home for my broadband router. That way, in a power cut, I don't lose the internet straight away – so I've still got time to order take-away!

## Photo Accessories

If you've got a tablet or smartphone that you want to use to take some photos with, there are a few gadgets and accessories that might make it easier to get that perfect shot.

### Selfie sticks

Selfie sticks are long sticks that you attach your phone to the end of. You then hold it out to take a photo of yourself (or a group of people) using the front facing camera on your device (which is nicknamed the “selfie camera”).



Most have a button on the handle of the stick that controls the camera shutter button, either by bluetooth or by a wire that runs up the stick and is connected to your phone via the headphone socket.

They started as a bit of a gimmick really but lots of people found that they worked better than just holding the phone out in front of them – because you didn't get your arm in the photo and you could include more of the background.

### Phone tripods

The tripods you can get for phones and tablets are just like the ones you might have used with a film or digital camera. The only difference is that they have a clamp at the top that's designed to hold a phone or tablet.

They're useful for group photos – you can set the

device up on a bookshelf, or table, or wherever, and use the timer function. They're also useful for video-calls so you don't end up with an achy arm from holding a tablet for too long.



There are lots of different tripods available, though they're more common for smartphones than for tablets. You can get mini tripods that easily fit in your pocket, there are even flexible ones that you can bend and wrap around an object to

get your camera in exactly the right place.

They vary in price quite a bit but you can pick a small one up for around £5.

### **Clip-on lenses**

These are exactly what they sound like – lenses that clip onto your phone or tablet. You can get super wide-angle lenses, telephoto lenses (for zooming in) and macro lenses (for close-ups of small things). They're simple to use – you just clip them on and use the camera app like normal.



They range from as little as £5 to around £100 for the really high-end lenses. (Though if you're thinking of spending £100, you're probably better off investing in a proper digital camera instead.)

If you do fancy trying one, make sure you check that it fits your make of phone or tablet. Some fit all makes of device but others are quite specific.

## Smart TVs, Sticks and Set-Top Boxes

There are so many different services these days for watching films and TV over the internet. And as many different devices you can buy to do it.

I'm going to quickly go through the main ways to get online television services onto your TV screen.

### A set-top box or something similar

“Set-top box” is a bit of an old-fashioned phrase these days – you won't fit a lot on top of a modern TV! But it's still used to describe all the many boxes, sticks and dongles you can get to add features to your TV.

They plug into an HDMI socket on your TV and then connect to your home broadband, usually by wi-fi. Once they're all plugged in and set up, you can use them to watch catch-up and on-demand programmes over the internet.



You can usually get other apps for them as well as the TV ones – you might get a basic version of a web browser like Chrome, or simple games to play using your remote control.

There are so many options on the market that I can't go into them all in detail, but here are some of the most popular ones:

**Freeview play box** – These are made by a few different manufacturers, and they're for free catch-up TV. Using one of these boxes is a lot like watching normal TV – but you can also go back and watch anything

that's been on in the last 7 days. You can also record programmes to watch later, and some let you access streaming services too (if you've paid for them).

**Amazon Fire TV (or Fire TV Stick)** – These were designed to work with an Amazon Prime Video account, but nowadays you can get all the main streaming services (Netflix, Disney+ etc.) if you've paid for them, as well as the free TV catch-up apps. I've got one at home, and it's pretty good.

**Roku Stick** – These are pretty similar to the Amazon Fire Stick, but they're not tied to any particular service. You can get free catch-up TV, Netflix, Now TV, Amazon Prime Video and Disney+ all through the same stick (if you have the right subscriptions).

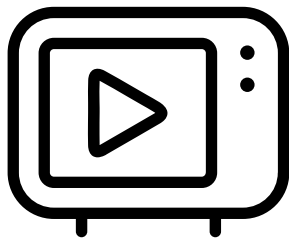
**Apple TV box** – Apple TVs let you rent, buy and watch films and TV from iTunes. You can also get all the standard free TV apps and apps for Amazon Prime Video and lots of other subscription TV that you pay for separately.

Most of the newer set-top boxes are sold as “4K” or “Ultra HD”. Now that sounds impressive – and in theory it gives you 4 times more detail than Full HD – but it'll only make any difference if your TV is 4K, too. 4K TVs are becoming more common, but only in recent years. So if the gadget you fancy getting happens to be 4K, great – but I wouldn't go out looking for one.

### **A smart TV**

A “smart” TV is one that can connect to the internet on its own, without needing to be plugged into a box.

Several different companies make them, but the most famous ones are by Samsung, Sony and LG.



The way they work is very similar to using a normal TV with an Amazon Fire Stick, Apple TV box or something similar plugged in. So you can watch various catch-up and on-demand programmes, play games and use a simple version of a web browser that's been designed to work on a TV.

### Other options

- Most modern **games consoles**, like a PS5 or Xbox, let you watch online TV as well as play games.
- You can **connect a laptop** to your TV using an HDMI cable. Then whatever's on the laptop screen shows up on your TV too. So all you need to do to watch online TV is go to the website on your laptop.
- "Screen mirroring" using something like a **Chromecast**. This just means showing whatever's on your tablet or smartphone screen on your TV. You need to plug a gadget into your TV to make it work, then your phone or tablet acts a bit like a remote. It's a lot more flexible than the other ways of getting internet TV onto your telly – you can show anything you like, from Netflix to last summer's holiday snaps.

“Chromecast” is the name of the gadget made by Google. They cost from around £35, and you can use the kit with any phone or tablet. The latest models come with a remote control too and work in a similar way to the TV sticks I mentioned earlier. Using one of these is called “casting”.



Not all apps are “cast” enabled, but there are ways around that. If you can get to whatever you want to watch through a web browser rather than an app, you can mirror the browser window on your TV screen instead.

The newer Chromecasts, and many of the other TV sticks and set-top boxes, come with handy voice control features too, so you can say what you want to watch and it will find it for you! Chromecasts use the Google Assistant for this – like the one you might have in your Android smartphone or tablet – but Apple devices use Siri, and Amazon ones use Alexa.

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## **Good luck with your tech-hunting!**

So – lots of things to think about, but don’t feel like you have to make all your decisions at once.

Remember, take your time and don’t feel pressured into buying something that you’re not 100% sure you need or want.

Good luck, and I hope you find exactly what you need!



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