BILL'S HOME TECH
Home & Small Business Tech Solutions

BILL'S COMPLETE MANUALS

Chargers, Cables & Power Banks

Plugs, watts, wireless charging, power banks and safety — explained in plain English, one step at a time

A plain-English guide to keeping everything charged

Take your time — you can't hurt your phone by plugging it in

Written for you by Bill — Bill's Home Tech

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For iPhone, Android, tablets & laptops · facts current November 2026

What's Inside

This is your guide to the chargers, cables and power banks that keep your phone, tablet and other gadgets running. It shows you how to tell the plugs apart, what watts and fast charging really mean, how wireless charging and power banks work, how to fly with a power bank, and how to stay safe. Read it in any order and at your own pace — there's no test, and you can't hurt anything by looking.

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PART 1

Getting Started

What a charger, a cable and a battery each do, how to read the tiny print on a charger, and the one promise that takes the worry out of all of it.

CHAPTER 1

A Note from Bill

Hello, and welcome. If you have a kitchen drawer full of tangled cords and little white boxes, and you're never quite sure which one goes with which gadget, this guide is for **you**. You are in very good company. Chargers and cables have changed a lot in the last few years, and the labels on them seem written for engineers. They don't have to be confusing.

I'm Bill. I've spent 30+ years working professionally with technology, and these days I help folks here in Portage County feel at home with theirs. I wrote this guide the way I'd explain things at your kitchen table: slowly, in plain English, with no fancy words. When a technical term can't be avoided, I'll stop and explain it right then.

What this guide covers

- How to tell the plugs apart — **USB-C**, **Lightning**, **USB-A** and **micro-USB** — and which one your phone uses.
- What **watts** mean, and how to get **fast charging** without buying the wrong thing.
- **Wireless charging**: MagSafe for iPhone and the Qi2 standard.
- **Car chargers** and **power banks**, including what size to buy and how to fly with one.
- Staying safe: heat, counterfeit chargers, recalls and the safety marks worth looking for.
- The battery-saving settings already built into your iPhone or Android phone.
- Simple setups for the bedside and for travel, labeling cords for the family, and recycling old batteries safely.

WHAT THIS DOES FOR YOU

What this guide does for you

Once you know a few simple clues, you can pick up any cord in that drawer and know what it's for, buy the right charger the first time, keep your phone's battery healthy for years, and travel without a dead phone or a problem at airport security.

The big promise: you can't hurt your phone by plugging it in

Here's the good news. Modern phones and tablets are smart about charging. The phone itself decides how much power to take, so plugging an iPhone into a bigger laptop charger, or an Android phone into an iPad charger, is perfectly safe. The worst that usually happens with a mismatched charger is that it charges *slowly*.

I'll be honest about the one place where care really matters: **batteries and heat**. A cheap counterfeit charger, a damaged power bank, or a phone charging under a pillow can be a genuine fire risk. Those parts of this guide are marked with safety boxes, and they're worth reading even if you skip everything else. See Chapter 26, *Heat and Charging Safety* to start.

You're never stuck alone

This guide will carry you a long way. But if you ever get stuck, call or text me at **(330) 200-8042** and we'll sort it out together. There's no such thing as a silly question about a cord. Read the chapters in any order, at your own pace. There's no test at the end.

— Bill

CHAPTER 2

Charger, Cable & Battery: The Three Pieces

Every charging setup has the same three pieces. Once you can name them, the whole subject gets much simpler, and you'll know exactly what to ask for at the store.

The piece	What it does
The charger (power adapter)	The block that plugs into the wall outlet. Some people call it the "brick" or the "cube." It turns household electricity into the gentle power your device needs.
The cable (cord)	Carries power from the charger to your device. Each end has a plug, and the two ends are often different shapes.
The battery	Lives inside your phone, tablet or watch. It stores the power so you can unplug and go.
A power bank	A battery in its own case that you carry with you, so you can charge your phone away from an outlet.

Why there are so many different ones

For years, every company used its own plugs. Apple had one shape, most Android phones had another, and older cameras and gadgets had yet others. That's why the drawer is full. The good news is that the world has settled on one plug, **USB-C**, for new phones, tablets and many laptops. Over time, you'll need fewer different cords, not more.

Separate pieces are a good thing

Many phones no longer come with a charger in the box, only a cable. That surprises people, but there's an upside: one good charger can serve several devices, and you can choose a charger that suits you, such as one with two or three ports for the nightstand.

TIP

Keep the box label

When you buy a new charger, take a photo of the box or the label on the charger itself. It lists the wattage, which you'll want later. You'll learn to read it in the next chapter, Chapter 3, *Reading the Fine Print on a Charger*.

GOOD TO KNOW

Charger or "adapter"?

Apple and many others call the wall block a **power adapter**. Most people call it a **charger**. They're the same thing, and this guide uses both words.

CHAPTER 3

Reading the Fine Print on a Charger

Every charger has tiny printing on it, usually on the side or on the prongs' face. It looks like alphabet soup, but you only need three things from it. A magnifying glass or your phone's camera zoomed in helps a lot.

The three numbers that matter

You'll see…	What it means
W — watts	How much power it can deliver. This is the most useful number. Bigger watts can mean faster charging, if your device can use it. Example: **20W**.
V — volts	The "pressure" of the electricity. You'll often see several listed, like 5V, 9V, 15V. That simply means the charger can adjust to what the device asks for.
A — amps	The "amount" flowing. Volts × amps = watts. For example, 9V × 2.22A is about 20W.

Finding the right line

Look for the word **Output**. The **Input** line (usually "100–240V") describes your wall outlet and is the same on nearly every charger. A charger rated 100–240V input works in the U.S. and in most other countries, with only a plug-shape adapter.

1. Hold the charger under a good light, or take a photo and zoom in.
2. Find the line that starts with **Output**.
3. Look for a number followed by **W**. If there isn't one, multiply the largest volts by the amps beside it.
4. Write the wattage on a small piece of tape on the charger, so you never have to squint again.

> TIP
>
> **Apple prints the wattage right on top**
>
> Apple's own chargers show the wattage (like **20W** or **30W**) on the top or bottom of the adapter. If you're not sure which Apple charger you have, look there first.

HEADS UP

No markings at all? Be suspicious

A real charger always lists its output and carries safety marks. A charger with no printing, misspelled words, or a logo that looks "off" may be a counterfeit. See Chapter 27, *Counterfeit Chargers & Charging Scams*.

PART 2

Telling Plugs Apart

USB-C, Lightning, USB-A and micro-USB: what each one looks like, which devices use it, and the adapters that connect old to new.

CHAPTER 4

USB-C: The New Standard

If you buy a new phone, tablet, pair of earbuds or laptop today, it almost certainly uses **USB-C**. It's the plug the whole industry has agreed on, and it's the one worth learning first.

How to recognize it

- A small, flat **oval**, rounded at both ends and about a third of an inch wide.
- It's the same on both sides, so it goes in **either way up**. No more flipping it over three times.
- Many cables now have USB-C on **both ends**. Older ones have USB-C on one end and the larger rectangle (USB-A) on the other.

Which iPhones use USB-C

Apple switched the iPhone to USB-C starting with the **iPhone 15** in 2023. Every iPhone since then, including the iPhone 16e, iPhone 17 family, iPhone Air and the newest models, uses USB-C. iPhone 14 and earlier use Apple's older Lightning plug (next chapter).

What USB-C on an iPhone can do

- Charge from any charger that follows the USB-C standard, including USB Power Delivery chargers from other brands.
- Charge from a computer's USB-C port.
- Charge **other** small things — AirPods, an Apple Watch, or another small USB-C device — at a gentle 4.5 watts, straight from the phone.
- Connect to a car with a USB-A port using a USB-C to USB-A cable.

GOOD TO KNOW

Same plug, different abilities

Here's the catch with USB-C: every cable *looks* the same, but they aren't all equal inside. Some carry more power, some move data faster. For everyday phone charging, almost any decent USB-C cable is fine. For laptops, see Chapter 14, *Tablets, Laptops & One Charger for Everything*; for the speed difference, see Chapter 15, *Charge-Only vs. Data Cables*.

CHAPTER 5

Lightning: Apple's Older Plug

From 2012 until 2023, iPhones used a plug Apple called **Lightning**. Millions of these phones are still in daily use, so Lightning cables aren't going away from your drawer just yet.

How to recognize it

- A thin, flat **tongue** of metal with a few gold contacts on each side — no hollow opening.
- Slightly narrower than USB-C, with squared-off edges.
- Like USB-C, it goes in either way up.

Devices that use Lightning

- **iPhone 5 through iPhone 14**, including the iPhone SE models.
- Many older iPads, AirPods and AirPods cases, Apple keyboards, mice and trackpads.
- Some older accessories made for iPhone, such as docks and speakers.

TIP

Moving to a USB-C iPhone? Keep your Lightning gear

Apple sells a small **USB-C to Lightning Adapter** that lets older Lightning accessories plug into a USB-C iPhone. Apple says it supports power, data and audio. It's handy for a favorite dock or older headphones.

HEADS UP

Very cheap Lightning cables

Lightning is Apple's own design, and bargain-bin Lightning cables are often uncertified. A common sign is the iPhone saying an accessory "may not be supported." See Chapter 29, *Safety Marks: UL, MFi and Friends* for what to look for.

CHAPTER 6

USB-A: The Classic Rectangle

USB-A is the flat rectangular plug you've seen for decades on computers, TVs and older chargers. It only goes in one way, which is why everyone has a story about trying it upside down.

Where you'll still find it

- Older wall chargers, including the little cube that came with many phones before 2020.
- Cars, especially models from before about 2020.
- Computers, TVs, hotel lamps, airplane seats and wall outlets with built-in USB ports.

Can I use it with a new phone?

Yes. A **USB-C to USB-A** cable connects a new phone to an older charger or car port. It will charge, just more slowly than a modern USB-C charger, because the fast-charging technology most phones use (USB Power Delivery) works over USB-C ports.

TIP

Which way is up?

On many USB-A plugs, the side with the little USB symbol (a trident shape) faces up when you plug into a laptop that sits flat. If it doesn't go in with a gentle push, flip it. Never force it.

GOOD TO KNOW

Phasing out, slowly

New chargers and laptops increasingly have only USB-C ports. When you buy a new charger, a USB-C one (or one with both kinds of ports) will serve you longer.

CHAPTER 7

Micro-USB and Other Older Plugs

Before USB-C, most Android phones, Kindle readers, Bluetooth speakers and headsets used **micro-USB**. Plenty of these gadgets still work perfectly well, so it's worth knowing the shape.

How to recognize micro-USB

- Tiny and flat, **wider at the top than the bottom** — a little trapezoid.
- It only goes in one way. The wide side matches the wide side of the port.
- It's easy to bend, so push it straight in and pull it straight out.

Other plugs you might find in the drawer

Plug	Where it's from
Mini-USB	Chunkier than micro-USB. Older cameras, GPS units and MP3 players.
Round barrel plugs	A round metal tip. Older laptops, routers, cordless phones, keyboards. These are device-specific — the size and voltage must match exactly.
Apple 30-pin	A wide flat plug from iPods and iPhones before 2012.
Magnetic watch and fitness chargers	Puck or clip shapes made for one model of watch or tracker.

HEADS UP

Barrel plugs are not interchangeable

Unlike USB, a round barrel charger from one device can damage another, even if the tip fits. Keep each barrel charger with the device it came with, and label it. See Chapter 33, *Labeling Cables for the Family*.

TIP

One adapter can save a drawerful

A small micro-USB-to-USB-C adapter tip (a few dollars) lets one USB-C cable charge your older micro-USB gadgets. It's charging-only for some tips, which is usually all you need.

CHAPTER 8

Which Plug Does My Device Use?

When in doubt, look at the opening on the device itself, then compare it with the table below. A flashlight helps — the port is often dark.

Device	Usual plug	Notes
iPhone 15 and later (incl. 16e, 17, Air)	USB-C	Cable in the box is USB-C on both ends
iPhone 5 through iPhone 14, iPhone SE	Lightning	Use a USB-C to Lightning cable with newer chargers
Android phones from about 2018 on	USB-C	Samsung Galaxy, Google Pixel, Motorola and more
Older Android phones	Micro-USB	Check the shape: a little trapezoid
Newer iPads	USB-C	Older iPads use Lightning — check the port
AirPods	USB-C or Lightning	Depends on the model and year; look at the case
Apple Watch	Magnetic puck	Newer pucks end in USB-C; older ones in USB-A
Most new laptops	USB-C	Some use a barrel plug or a magnetic plug
Kindle e-readers	USB-C (newer), micro-USB (older)	Look at the bottom edge

Find your iPhone model in Settings

1. Open **Settings**.
2. Tap **General**, then **About**.
3. Look at **Model Name**. If it says iPhone 15 or higher (or iPhone 16e, 17e or Air), you have USB-C.

TIP

Tape a sample to the drawer

Many families keep a short labeled cable of each kind in a zip-top bag inside the charging drawer. When a new gadget arrives, you can compare its port with the samples in seconds.

CHAPTER 9

Adapters and Dongles

An **adapter** (sometimes called a "dongle") lets one kind of plug fit another kind of port. Used well, a couple of adapters can mean you don't have to throw out good accessories.

Adapter	What it's for
USB-C to Lightning adapter	Plug older Lightning accessories into a USB-C iPhone or iPad.
USB-C to USB-A adapter	Plug an older USB-A cable or flash drive into a USB-C laptop or phone.
USB-C to 3.5 mm headphone adapter	Use wired headphones with a phone that has no headphone jack.
USB-C to HDMI adapter	Show your phone, tablet or laptop on a TV (on models that support it).
Micro-USB to USB-C tip	Charge an older gadget with a USB-C cable.

Adapter good habits

- Buy from a known brand or the device maker. Adapters carry power, and quality matters.
- Don't stack adapters on adapters. One is fine; three in a chain is asking for a wobbly, loose connection.
- An adapter that gets hot to the touch should be unplugged and retired.

GOOD TO KNOW

Not every adapter does everything

Some cheap adapters only charge and won't carry sound or data. If an adapter's package doesn't say what it supports, assume it's charging-only.

WHAT THIS DOES FOR YOU

Why this matters

A favorite bedside speaker, a car stereo cord, or a pair of comfortable wired headphones can keep working with your new phone for the price of a small adapter.

PART 3

Watts & Fast Charging

What a watt is, how fast charging works, what your phone, tablet and laptop actually need, and how to choose a cable that does the job.

CHAPTER 10

Watts in Plain English

A **watt** is simply a measure of how much power flows at once. Think of a garden hose: a wider hose fills the bucket faster. A 40-watt charger is a wider hose than a 5-watt one.

The device is in charge, not the charger

This is the most reassuring fact in this guide. A phone only takes as much power as it's built to accept. If you plug a phone that can take 20 watts into a 65-watt laptop charger, the phone still takes about 20 watts, and it's perfectly safe. The extra capacity just sits unused.

Charger size	What it's good for
5W	The tiny cube that came with older iPhones. Slow — an overnight charger.
10–12W	Older iPad chargers and many USB-A chargers. Gentle and steady.
20–30W	A modern phone charger. Enough for fast charging most phones.
35–45W	Fast charging for the newest phones; good for tablets and two devices at once.
60–100W+	Laptop chargers. Will also charge phones safely.

Why your phone doesn't charge at full speed the whole time

Phones charge fastest when the battery is low, then slow down as they fill — especially past about 80 percent. That's on purpose; it protects the battery. So "50 percent in 20 minutes" doesn't mean 100 percent in 40.

WHAT THIS DOES FOR YOU

What this means for you

You don't need a different charger for every device. One good USB-C charger of 30 watts or more can safely charge your phone, your tablet and your earbuds — one at a time, or together if it has more than one port.

GOOD TO KNOW

Multi-port chargers share

A 65-watt charger with three ports usually *splits* its power when several things are plugged in. The fine print often shows how it divides. For one phone and one watch, that's plenty.

CHAPTER 11

Fast Charging and USB Power Delivery

Fast charging means your phone can safely take more power for the first part of a charge, so you get a useful amount of battery in a short time — handy when you're about to head out the door.

USB Power Delivery: the common language

Most fast charging today uses a standard called **USB Power Delivery**, often shortened to **USB-PD** or just **PD**. The charger and the phone "talk" for a split second when you plug in and agree on the right amount of power. Apple's iPhones use USB-PD, and so do Google Pixel, Samsung Galaxy and most other phones and laptops.

What you need for fast charging

1. A charger with a **USB-C port** that says **USB-PD** or **Power Delivery** on the box or label.
2. Enough watts for your device (see Chapter 12, *Fast Charging Your iPhone* and Chapter 13, *Fast Charging Android Phones*).
3. A decent **USB-C cable** (or USB-C to Lightning for older iPhones).
4. A comfortable temperature. Phones slow or pause fast charging when they're very hot or very cold.

HEADS UP

USB-A chargers usually aren't fast

The older rectangular USB-A ports on many chargers, cars and outlets don't use USB-PD. Your phone will charge, just slowly. If you want speed, use a USB-C port.

GOOD TO KNOW

Other fast-charging names

Some brands have their own names, such as Samsung's **Super Fast Charging**. Their fastest modes need a compatible USB-C charger; the phone maker's specifications list which one. With any ordinary USB-PD charger, the phone still charges well, just not at its very top speed.

CHAPTER 12

Fast Charging Your iPhone

Apple publishes exactly what each iPhone needs for fast charging. Here it is in one place. Times are Apple's estimates from an empty battery; real life varies with temperature and use.

iPhone	Charger for fast charging	Apple's estimate
iPhone 18 Pro, 18 Pro Max	40W Dynamic Power Adapter with 60W Max, or a comparable 60W+ USB-PD charger	Up to 50% in about 15 min
iPhone 17, 17 Pro, 17 Pro Max	40W or higher USB-C charger	Up to 50% in about 20 min
iPhone 17e, iPhone Air	20W or higher USB-C charger	Up to 50% in about 30 min
iPhone 15, 16 and earlier fast-charge models	18W or higher USB-C USB-PD charger	Fast charging supported

Cables for each iPhone

- **iPhone 15 and later:** a USB-C cable, like the one that came in the box.
- **iPhone 14 and earlier:** a USB-C to Lightning cable plugged into a USB-C charger.

TIP

Already have a Mac laptop charger?

Apple says you can use a higher-wattage USB-C adapter, like the one that came with a Mac laptop, to charge your iPhone faster. It's safe — the iPhone takes only what it needs.

HEADS UP

The old 5-watt cube

The little square 5W charger that came with older iPhones still works, but it's slow, and it has a USB-A port. For a newer iPhone, a 20W or larger USB-C charger is a worthwhile upgrade at about $15 to $40.

GOOD TO KNOW

Fast charging slows on purpose when hot

Apple notes that fast charging might not work when it's too hot or too cold. If your phone is warm from the sun or the car, it may charge slowly until it cools down. That's protection, not a fault.

CHAPTER 13

Fast Charging Android Phones

Android phones come from many makers, so the exact wattage varies. The good news: nearly every recent Android phone charges through **USB-C** and uses **USB Power Delivery**, so one good USB-C PD charger works for almost all of them.

Finding what your phone supports

1. Find your exact model. Open **Settings** and look for **About phone** (it's near the bottom on most phones).
2. Search the web for your model name plus the word "specifications" on the maker's own site.
3. Look for a line about **charging** or **wired charging**, listed in watts.
4. Buy a USB-C PD charger at least that size. Going bigger is fine.

Rough guide

Phone	Charger to look for
Budget and mid-range phones	A 20–25W USB-C PD charger is usually plenty.
Most flagship Samsung and Pixel phones	A 25–45W USB-C PD charger covers them; check your model's specs.
Not sure?	A 30W or larger USB-C PD charger is a safe, versatile choice.

TIP

Charge settings live in Battery

On both Samsung and Pixel phones, charging options are under **Settings > Battery**. That's also where you'll find the battery-protection settings in Chapter 31, *Battery Health on Android*.

GOOD TO KNOW

No charger in the box

Many Android phones, like iPhones, now come with only a USB-C cable. If you're still using a much older charger, upgrading to a USB-C PD one is often the single biggest speed improvement you can make.

CHAPTER 14

Tablets, Laptops & One Charger for Everything

Many tablets and most newer laptops now charge through USB-C too. That opens up a lovely possibility: one charger for the phone, the tablet and the laptop, especially when you travel.

How many watts each needs

Device	Typical charger
Phones	About 20–45W for fast charging; any USB-C charger works slowly.
Tablets and iPads	About 20–45W. A phone charger works, more slowly for big tablets.
Small, light laptops	Often 30–65W.
Larger laptops	Often 65–100W, and some need more.

The easiest way to know what a laptop needs is to look at the charger that came with it. Whatever wattage is printed there, buy a replacement or travel charger of **that wattage or higher**.

What happens with a smaller charger?

A smaller USB-C charger may charge a laptop very slowly, only while it's turned off, or not keep up while you're using it. It won't damage it. If the laptop shows a "slow charger" message, that's why.

TIP

The cable matters for laptops

Laptops that draw more than 60 watts need a USB-C cable rated for higher power. The package will say something like **100W** or **240W**. For phones, ordinary cables are fine. See Chapter 16, *Choosing a Good Cable*.

WHAT THIS DOES FOR YOU

Fewer things to pack

If your phone, tablet and laptop are all USB-C, a single 65-watt charger with two or three ports and one or two good cables can replace a whole bag of chargers on a trip.

CHAPTER 15

Charge-Only vs. Data Cables

Here's something that puzzles a lot of people: some cables charge a phone but refuse to let it talk to the computer. Nothing is broken. Some cables simply don't have the wires for data inside.

Type	What it does
Charge-only cable	Carries power only. The phone charges, but the computer doesn't see it. Common with very cheap cables and with cables bundled with speakers, lights and toys.
Data cable (USB 2)	Charges *and* moves photos and files at ordinary speed. The cable that comes with an iPhone 15 or later is this kind.
Fast data cable (USB 3 or Thunderbolt)	Moves large files and videos much faster. Usually thicker and costs more. Only some devices can use the extra speed.

If the computer won't see your phone

1. Try the cable that came with your phone, or another one you know moves data.
2. Unlock the phone. On an iPhone, tap **Trust** if it asks whether to trust this computer.
3. On an Android phone, pull down from the top and tap the USB notification, then choose **File transfer**.
4. Try a different USB port on the computer.

TIP

Charge-only can be a good thing

A charge-only cable is actually handy for public USB ports, such as in airports, because it can't carry data at all. Your own wall charger is safer still.

GOOD TO KNOW

Speed is about the device too

Apple says the iPhone 15 Pro and later Pro models can move data at up to 10 gigabits per second with an optional USB 3 cable. Other iPhones use USB 2 speeds no matter which cable you use.

CHAPTER 16

Choosing a Good Cable

A good cable is one of the cheapest upgrades you can make. A frayed or flimsy one is one of the most common reasons a phone "won't charge."

What to look for

- **The right plugs on each end** for your charger and your device.
- **A known brand** or the device maker's own cable, from a store you trust.
- **A power rating** on the package (for example 60W) — plenty for phones and tablets.
- **A sturdy strain relief**: the thicker collar where the cord meets the plug, which keeps it from bending sharply.
- **A sensible length.** About 3 feet for the car or desk; 6 feet (2 meters) for a bed or recliner.

Approximate prices (November 2026)

Cable	Typical price
Basic USB-C cable from a known brand	About $10–$20
Braided or extra-long cable	About $15–$30
High-power (100W–240W) or fast data cable	About $20–$70
Cables from the phone maker itself	Often a bit more than store brands

HEADS UP

Retire damaged cables

Exposed wires, a bent plug, scorch marks or a cable that only works at a certain angle should go straight to recycling. A damaged cable can overheat. See Chapter 34, *Recycling Old Batteries & Chargers Safely*.

TIP

Wrap loosely

Coil cables in loose loops, like a garden hose, and don't wrap them tightly around the charger. Sharp bends near the plug are what usually breaks them.

PART 4

Wireless Charging

How charging pads work, Apple's MagSafe, the Qi2 standard that brought magnets to everyone, and how to get the most out of a wireless charger.

CHAPTER 17

How Wireless Charging Works

"Wireless" charging isn't completely wireless — the pad or stand still plugs into the wall. But you don't have to fiddle with a plug on the phone. You just set the phone down, and it starts charging.

The basics

- The pad has a coil of wire inside. So does your phone. Power passes between them across a tiny gap.
- The coils need to line up. A phone placed off-center may charge slowly or not at all.
- Wireless charging is a little slower and warmer than plugging in. It's ideal overnight or at a desk.
- Most phones from the last several years support it. The common standard is called **Qi** (say "chee").

Three kinds you'll see in stores

Type	What it means
Qi (original)	Flat pads and stands. Works with most iPhones from iPhone 8 on and most Android flagships. No magnets, so placement matters.
MagSafe	Apple's magnetic charger for iPhone 12 and later. Snaps into place. See Chapter 18, *MagSafe for iPhone*.
Qi2	The newer standard with magnets built in, like MagSafe, for iPhones and a growing number of Android phones. See Chapter 19, *Qi2 and the Newer 25-Watt Standard*.

WHAT THIS DOES FOR YOU

Why people love it

No more fumbling for a small port in the dark, and less wear on the phone's charging port. For hands that aren't as nimble as they used to be, setting a phone down on a stand is much easier than lining up a plug.

HEADS UP

Keep cards and metal off the pad

Don't charge with credit cards, key fobs, or metal objects between the phone and the pad. They can be damaged, and metal can get hot.

CHAPTER 18

MagSafe for iPhone

MagSafe is Apple's magnetic wireless charging for iPhone 12 and later (except the iPhone 16e). A ring of magnets snaps the charger onto the back of the phone in exactly the right spot, every time.

How fast is it?

Apple's newest MagSafe Charger can deliver up to **25 watts** to recent iPhones — fast enough to be useful during the day, not just overnight. To get that speed, it needs a **30-watt or larger** USB-C power adapter.

iPhone	Top MagSafe speed (Apple MagSafe Charger)	Adapter needed
iPhone 17, 17 Pro, 17 Pro Max, 16 Plus, 16 Pro Max, 18 Pro models	Up to 25W	30W or larger
iPhone 16, iPhone 16 Pro	Up to 22.5W	30W or larger
iPhone Air	Up to 20W	30W or larger
iPhone 17e, iPhone 15 and earlier MagSafe models	Up to 15W	20W or larger

Setting it up

1. Plug the MagSafe Charger's USB-C end into a 30W or larger USB-C power adapter, then plug the adapter into the wall.
2. Lay the charger face up on a flat surface, clear of metal objects.
3. Set your iPhone on it. The magnets pull it into place, and a charging symbol appears.
4. If you put the phone on before plugging the charger in, lift the phone off, wait three seconds, and set it back down to get full speed.

GOOD TO KNOW

Slower with headphones plugged in

If something is plugged into the iPhone's port (such as wired headphones) while it's on MagSafe, Apple limits the wireless speed to meet regulations. And if the phone is plugged in by cable *and* sitting on MagSafe, it charges through the cable.

TIP

Cases

Thin MagSafe-compatible cases keep the magnets working. Thick cases, wallets or a credit card in a case pocket can block charging or damage the card. Remove cards before charging.

CHAPTER 19

Qi2 and the Newer 25-Watt Standard

In 2023 the group that manages the Qi standard, the **Wireless Power Consortium**, introduced **Qi2** ("chee two"). It brought magnetic snap-on alignment, based on Apple's MagSafe design, to chargers and phones from any brand.

What the labels mean

Label	What it means
Qi2 (or "Qi2 15W")	Magnetic wireless charging at up to 15 watts.
Qi2 25W (sometimes called Qi2.2)	The newer, faster version, introduced in 2025, at up to 25 watts on phones that support it.
Qi2 Ready	A phone that can charge at Qi2 speeds but has no magnets built in. It needs a magnetic case to snap onto the charger.
Plain Qi	The older non-magnetic standard. Still works, more slowly, and placement matters.

Will a Qi2 charger work with my phone?

- **iPhones** with MagSafe work with Qi2 chargers. Apple's own MagSafe Charger is the most reliable way to get the top speeds Apple lists.
- **Android phones** vary. Some newer models have Qi2 magnets built in; others are "Qi2 Ready" and need a magnetic case. Check your phone maker's specifications.
- **Older Qi phones** still charge on a Qi2 pad, at older Qi speeds, without the magnetic snap.

TIP

Look for the official logo

A genuine Qi2 product is certified by the Wireless Power Consortium and shows the Qi2 logo on the box. "Magnetic wireless charger" alone doesn't mean it meets the standard.

GOOD TO KNOW

Speed claims vary by phone

A charger labeled 25 watts only charges at 25 watts if your phone supports it. Otherwise it charges at whatever your phone can take. It's still safe.

CHAPTER 20

Wireless Charging Tips & Troubles

Wireless charging is simple, but a few small habits make it work better and keep the battery cooler.

Good habits

- Use a charging **stand** at the bedside: the phone stays upright so you can see the time, and it's easy to lift off.
- Use the power adapter the charger maker recommends. A too-small adapter is the most common reason for slow wireless charging.
- Keep the pad in the open, not under a pillow, blanket or pile of papers.
- Take off very thick cases, wallet cases and pop-out grips if charging is unreliable.

If it won't charge wirelessly

1. Check that the pad's light (if it has one) is on, and that the adapter is plugged firmly into the wall.
2. Lift the phone, wait a few seconds, and set it down again, centered.
3. Remove the case and try again.
4. Restart the phone.
5. Try a cable. If the cable works, the problem is the pad, its adapter, or the case.

GOOD TO KNOW

Warm is normal; hot isn't

Apple notes the iPhone and MagSafe Charger may get slightly warmer while charging, and that the iPhone may pause charging above 80 percent if the battery gets too warm. That's protection. If anything is too hot to hold comfortably, unplug it. See Chapter 26, *Heat and Charging Safety*.

WHAT THIS DOES FOR YOU

A gentler overnight charge

Paired with the battery-health settings in Chapter 30, *Battery Health on iPhone* and Chapter 31, *Battery Health on Android*, a bedside wireless stand gives you a fully charged phone each morning without anyone having to fumble with a plug.

PART 5

Power on the Go

Car chargers, power banks, what the numbers on a power bank mean, how to fly with one, and a simple travel kit that covers almost everything.

CHAPTER 21

Car Chargers

A phone that dies on the road is more than an annoyance — it's your map, your way to call for help, and your way to let family know you've arrived. A good car charger is one of the best small investments you can make.

Two ways to charge in the car

Option	What to know
The car's built-in USB port	Convenient, but older cars often have slow USB-A ports meant mainly for music and CarPlay or Android Auto. Fine for keeping a phone topped up on a long drive.
A plug-in car charger	Fits the round 12-volt socket (the old cigarette lighter). A USB-C model with USB-PD charges a phone quickly, even while it's running maps.

Choosing a car charger

- Look for at least one **USB-C port** with **USB-PD**, rated about **20–30 watts** or more for that port.
- Two ports are handy if a passenger also needs to charge.
- Pick one that sits snugly in the socket. A loose charger cuts in and out over bumps.
- Expect to pay about $15 to $35 for a good one from a known brand.

Using CarPlay or Android Auto with a cable

If your car uses a cable for CarPlay or Android Auto, use the car's own USB port marked for it (often with a phone or smartphone symbol). For a USB-C iPhone in a car with USB-A ports, Apple says to use a compliant USB-C to USB-A cable.

STAY SAFE

Heat in a parked car

A car in summer sun gets far hotter than a phone or power bank is designed to handle. Don't leave phones, power banks or charging cables plugged in and baking in a parked car. Take them with you. See Chapter 26, *Heat and Charging Safety*.

TIP

Unplug when you park

In some cars, the 12-volt socket stays powered with the engine off. Unplugging the charger when you park avoids any slow drain on the car battery.

CHAPTER 22

Power Banks: What Size Do You Need?

A **power bank** (also called a portable charger or battery pack) is a battery in a case. Charge it at home, slip it in a purse or pocket, and use it to recharge your phone anywhere.

Reading the size: mAh and Wh

Number	What it means
mAh (milliamp-hours)	The number on the box, like **10,000 mAh**. Bigger means more charge stored. It's the number stores advertise.
Wh (watt-hours)	A more honest measure of the energy inside, and the number airlines care about. It's printed in small type on the power bank itself.

To turn mAh into Wh, the FAA's formula is: divide mAh by 1,000, then multiply by the battery's voltage. Most power banks use cells of about 3.6 or 3.7 volts. So a 10,000 mAh power bank is about 10 × 3.7 = **37 Wh**, and a 20,000 mAh one is about **74 Wh**.

How many phone charges will I get?

Some energy is always lost turning the power bank's battery into charging power, so you won't get the full number on the box. As a rough rule of thumb:

Power bank size	Roughly	Good for
5,000 mAh	About one phone charge (less for large phones)	A pocket backup for a day out
10,000 mAh	About one and a half to two phone charges	Most people; travel days
20,000 mAh	About three to four phone charges, or a tablet	Long trips, power outages, two people
25,000 mAh and up	Several devices, sometimes a laptop	Heavy; check airline limits first

WHAT THIS DOES FOR YOU

Peace of mind

A charged 10,000 mAh power bank in your bag means a full day out, a long medical appointment or a delayed flight doesn't end with a dead phone and no way to call home.

TIP

Prices (November 2026)

A good 10,000 mAh power bank from a known brand costs about $20 to $40; 20,000 mAh about $30 to $60. Very cheap no-name power banks are where most of the safety problems are. See Chapter 28, *Recalls: How to Check Your Power Bank or Charger*.

GOOD TO KNOW

Recharge it every few months

A power bank slowly loses charge sitting in a drawer. Top it up every two or three months so it's ready when you need it, especially for power outages.

CHAPTER 23

Power Bank Features: Pass-Through, Ports & More

Power bank boxes are covered in features. Here's what the common ones mean and which ones are actually worth having.

Feature	What it does
USB-C PD output	Charges your phone fast. Worth having.
USB-C input	Lets you recharge the power bank with the same USB-C charger and cable as your phone. Worth having — one less cord.
Pass-through charging	Charge the power bank and your phone at the same time from one wall outlet, with the phone usually charged first. Handy in hotels with few outlets.
Built-in cable	A cable attached to the power bank, so you can't forget it. Convenient.
Magnetic (MagSafe or Qi2) power bank	Snaps on the back of the phone and charges wirelessly. Convenient but slower and warmer than a cable.
Charge level display	Lights or a number showing how full it is. Very helpful.

A word on pass-through

Pass-through charging is useful, but it makes a power bank work harder and warmer. Use it on a hard surface in the open, and don't leave it doing so unattended for long stretches. Not every power bank supports it; the box or manual will say.

Charging the power bank itself

1. Use the cable and port marked **Input** (on many newer models, the USB-C port does both jobs).
2. Plug into a wall charger — ideally USB-C PD for speed.
3. Watch the lights or display. A big power bank can take several hours to fill.
4. Unplug it once it's full, and store it somewhere cool and dry.

STAY SAFE

Never charge a damaged power bank

If a power bank is swollen, cracked, dented, unusually hot, or smells like chemicals, stop using it right away. Don't charge it, don't throw it in the trash, and keep it away from anything flammable. See Chapter 26, *Heat and Charging Safety* and Chapter 34, *Recycling Old Batteries & Chargers Safely*.

CHAPTER 24

Flying with Power Banks

Power banks and spare batteries have special rules on airplanes because a damaged lithium battery can overheat. In the cabin, the crew can deal with it quickly. In the cargo hold, no one can. The rules are simple once you know them.

The FAA rules in plain English

- **Power banks go in your carry-on only.** Never in checked luggage.
- If your carry-on is checked at the gate or planeside, **take the power bank out** and keep it with you.
- **Up to 100 Wh:** allowed for personal use. That covers nearly every phone power bank (a 20,000 mAh one is about 74 Wh).
- **101 to 160 Wh:** only with the airline's approval, and no more than two of them.
- **Over 160 Wh:** not allowed on passenger planes. Big "portable power stations" are in this group.
- Protect the terminals from short circuits: keep each one in its pouch, original packaging or a small plastic bag.
- **Damaged or recalled** batteries must not be carried at all.

Airlines can be stricter — and many now are

The FAA itself says that many airlines, both U.S. and international, set stricter limits on how many power banks each passenger may bring, regardless of size, and it asks travelers to check with their airline before every trip.

In 2025 and 2026 several U.S. airlines added rules of their own. As reported by travel news outlets, Southwest Airlines requires a power bank to stay **visible** (not in a bag or overhead bin) while it's in use, and since April 2026 it has limited passengers to **one** power bank. Other airlines cap the number of spare batteries. Rules keep changing, so look at your airline's own "lithium batteries" page a few days before you fly.

Before you fly: a five-minute check

1. Find the **Wh** number printed on your power bank. If there's only mAh, use the formula in Chapter 22, *Power Banks: What Size Do You Need?*.
2. Look up your airline's "lithium batteries" or "power bank" page and note any limit on how many.

3. Check that the power bank isn't swollen, cracked, or on a recall list (see Chapter 28, *Recalls: How to Check Your Power Bank or Charger*).
4. Pack it in your **personal item or carry-on**, somewhere easy to reach.
5. On board, keep it where you can see it while it's charging, and never leave it charging unattended.

STAY SAFE

If a battery gets hot on the plane

Tell a flight attendant **immediately** if your power bank or phone is overheating, swelling, smoking or burning. Crews are trained for exactly this. Don't try to handle it yourself or hide it.

GOOD TO KNOW

Unlabeled power banks can be refused

A power bank with no readable capacity label may be questioned at security or the gate, especially on international trips. Buy one with clear markings and keep them legible.

CHAPTER 25

A Simple Travel Charging Kit

With USB-C on so many devices now, a small pouch can hold everything you need for a week away. Here's a kit that works for most people.

The kit

- **One wall charger** with two or three ports, about 45 to 65 watts total (enough for a phone, tablet and earbuds).
- **Two cables** that fit your devices — one for the phone, one spare. Add a USB-C to Lightning cable if anyone has an older iPhone.
- **A 10,000 mAh power bank**, charged before you leave.
- **A car charger** if you're driving or renting a car.
- **Your watch charger**, if you wear a smartwatch. It's the one people most often forget.
- **A plug adapter** if you're traveling abroad (see below).

Traveling outside the U.S.

Check the **Input** line on your chargers (see Chapter 3, *Reading the Fine Print on a Charger*). Most phone and laptop chargers say 100–240V, which means they work on foreign electricity with only a small plug-shape adapter. You usually don't need a bulky voltage converter for these, and you shouldn't use one with them.

HEADS UP

Hair dryers and curling irons are different

High-power appliances that only say 120V can't use a simple plug adapter abroad. Many hotels provide hair dryers. Leave yours at home rather than risk it.

Hotel tips

- Lamp and nightstand USB ports are often slow USB-A. Bring your own charger for overnight.
- Plug in at the desk or nightstand, not on the bed.
- Before checkout, check every outlet. A charger left in the wall is the most common thing left behind.

TIP

Color-code the pouch

Use a brightly colored pouch and colored cable ties so the kit is easy to spot in a bag and easy to see plugged into a hotel wall. See Chapter 33, *Labeling Cables for the Family*.

PART 6

Safety & Battery Health

Heat, counterfeit chargers, recalls and the safety marks worth trusting — plus the settings that help your phone's battery last for years.

CHAPTER 26

Heat and Charging Safety

Lithium-ion batteries — in phones, tablets, power banks, watches, e-bikes and more — are safe in normal use. But the FAA notes that any lithium-ion battery can overheat in a process called **thermal runaway** if it's damaged, overheated, exposed to water, overcharged, or has a manufacturing defect. A few habits keep the risk very low.

Safe charging habits

- **Charge on a hard, open surface** — a nightstand or counter, not a bed, sofa, pillow or under a blanket.
- **Use chargers and cables from known brands**, and replace damaged ones.
- **Keep devices out of hot cars and direct sun**, and away from heaters and stoves.
- **Don't charge a phone that's been dropped in water** until it's completely dry.
- **Don't cover a charging phone or power bank**, and don't charge inside a closed bag.
- **Unplug power banks once they're full** and store them somewhere cool and dry.

Warning signs — stop using it right away

Sign	What it looks like
Swelling	A bulging back, a screen lifting off, or a case that no longer sits flat.
Heat	Too hot to hold comfortably, especially when it's not even charging.
Smell	A sweet, chemical or burning smell.
Sound or smoke	Hissing, popping, crackling or any smoke.
Damage	Cracks, dents, punctures, or melted plastic on a charger or cable.

STAY SAFE

If a battery is smoking or swelling

Unplug it if you can do so safely. Move away from it, and if it's smoking or on fire, get everyone out and call **911**. Don't put a swollen battery in the trash or a recycling bin, and don't try to puncture or press it flat. Once it has cooled, place it on a nonflammable surface away from anything that can burn, and ask the device maker or your local household hazardous waste program what to do.

GOOD TO KNOW

Warm is normal

A phone feeling warm while it charges, especially fast or wirelessly, is normal. Phones protect themselves by slowing or pausing charging when they get too warm. "Too hot to hold" is the line to watch for.

CHAPTER 27

Counterfeit Chargers & Charging Scams

Counterfeit chargers and cables are made to look like famous brands, especially Apple's white chargers. Inside, they often skip the safety parts that keep electricity where it belongs. They're the main reason charger fires happen.

Signs a charger may be fake

- A price that's far too good — a "genuine Apple" charger at a fraction of the store price.
- Sold by an unknown seller on a marketplace site, a flea market or a gas-station rack.
- Misspelled words, blurry printing, or missing wattage and safety marks.
- It feels unusually light, or the prongs are loose or rough.
- It gets hot quickly, buzzes, or your phone warns that the accessory isn't supported.

Buying safely

1. Buy from the device maker, a major retailer, or a well-known accessory brand's own store.
2. On marketplace sites, check that the seller *is* the brand or the retailer itself.
3. Look for the safety marks in Chapter 29, *Safety Marks: UL, MFi and Friends* on the charger itself, not just the box.
4. Keep the receipt. If it runs hot or fails, return it and stop using it.

SCAM ALERT

Public USB charging ports

Public USB ports in airports, hotels and malls are convenient, but you can't know what's behind them. The safest choice is to plug **your own charger** into a regular wall outlet, or use your own power bank. If you must use a public USB port, a charge-only cable (see Chapter 15, *Charge-Only vs. Data Cables*) can't carry data.

SCAM ALERT

"Your charger is recalled — pay a fee"

A real recall never asks you for a payment, a gift card, or your bank details to get a refund or replacement. If a call, text or email says your charger or power bank is recalled, don't use its link or number. Go to **cpsc.gov** or the company's own website yourself. See Chapter 28, *Recalls: How to Check Your Power Bank or Charger*.

WHAT THIS DOES FOR YOU

Why it's worth a few extra dollars

A known-brand charger costs a little more, but it protects a phone worth hundreds of dollars — and, more importantly, your home.

CHAPTER 28

Recalls: How to Check Your Power Bank or Charger

Even big-name brands sometimes recall power banks and chargers when a batch turns out to have a defect. In 2025, for example, Anker recalled more than a million PowerCore 10000 power banks in the U.S. (model A1263) over a fire risk, as widely reported, and other brands have had power bank recalls too. Checking takes just a few minutes.

Where to check

- **cpsc.gov/Recalls** — the U.S. Consumer Product Safety Commission's official list. Search by brand or product type.
- **The maker's own website** — look for a "Recall" or "Safety notice" link, usually at the bottom of the page.
- **The store where you bought it** — many retailers post recall notices too.

How to check yours

1. Find the **model number** on the power bank or charger. It's in the tiny print, often starting with a letter.
2. Write down the brand, the model number, and the serial number or date code if there is one.
3. Search for the brand on **cpsc.gov/Recalls**, or go to the maker's recall page and enter the details.
4. If it's recalled, **stop using it right away** and follow the recall's instructions, which usually explain how to get a refund or replacement.
5. Don't put a recalled battery in the trash. Follow the recall's disposal instructions, or see Chapter 34, *Recycling Old Batteries & Chargers Safely*.

STAY SAFE

Recalled batteries can't fly

The FAA says damaged or recalled batteries must not be carried aboard an aircraft, in carry-on or checked bags. Check before a trip.

TIP

Register new products

When you buy a new power bank or charger, fill in the maker's product registration card or web form. Then the company can contact you directly if there's ever a recall.

CHAPTER 29

Safety Marks: UL, MFi and Friends

Small symbols on a charger tell you whether it was tested by an independent lab or certified by the people who make the standard. They're not a guarantee — counterfeiters copy them — but on a product from a trustworthy seller, they're a good sign.

Mark	What it tells you
UL, ETL or CSA mark	An independent testing lab checked the charger for electrical and fire safety. Look for one of these on any wall charger or power bank sold in the U.S.
MFi ("Made for iPhone / iPad")	Apple's certification program for accessories, especially Lightning cables and accessories. Look for the badge on the package.
Qi2 logo	Certified by the Wireless Power Consortium as meeting the Qi2 wireless standard.
USB-IF certified logo	The USB group's certification for cables and chargers; some show the cable's power rating, such as 60W or 240W.
FCC mark	Means it shouldn't interfere with radios and TVs. It's *not* a fire-safety rating.

Where to look

1. Check the charger or power bank itself — the marks should be molded or printed on the case.
2. Check the box for the MFi badge (for Lightning gear) or the Qi2 logo (for wireless chargers).
3. Be wary if the box shows marks that the product itself doesn't.

HEADS UP

"Compatible with" isn't the same as certified

"Compatible with iPhone" or "for Samsung" in a listing title means nothing official. Certification badges are what count.

TIP

Known brands make it simple

You don't have to become an expert in logos. Buying a known-brand charger from a store you trust does most of this checking for you.

CHAPTER 30

Battery Health on iPhone

Every rechargeable battery slowly wears out with age and use. Apple builds in settings that reduce that wear, mainly by limiting how long your iPhone sits at a full 100 percent. They're already on by default, but it's worth knowing where they are.

iPhone 15 and later: Charge Limit

1. Open **Settings**, then tap **Battery**.
2. Tap **Charging**.
3. Choose a **charge limit** from 80 percent to 100 percent, in 5 percent steps.
4. At 100 percent, you can also turn on **Optimized Battery Charging**.

iPhone 14 and earlier: Optimized Battery Charging

1. Open **Settings**, then tap **Battery**.
2. Tap **Battery Health & Charging**.
3. Make sure **Optimized Battery Charging** is on.

How Optimized Battery Charging works

Your iPhone learns your daily routine. When it expects to stay on the charger for a long time, such as overnight, it waits at 80 percent and finishes charging shortly before you usually unplug. Apple says it needs at least 14 days to learn your habits.

GOOD TO KNOW

Why it sometimes goes to 100%

With a charge limit below 100 percent, Apple says your iPhone will occasionally charge to 100 percent anyway, to keep its battery-level estimate accurate. That's normal. Your iPhone may also suggest a limit based on your habits.

TIP

Who should choose 80%?

If you usually end the day with plenty of battery left, an 80 or 85 percent limit can help the battery last longer over the years. If you're often running low by evening, leave it at 100 with Optimized Battery Charging on.

CHAPTER 31

Battery Health on Android

Android phones have similar protections, with different names depending on the maker. Here are the two most common: Samsung Galaxy and Google Pixel. Menu names can vary a little by model and software version.

Samsung Galaxy: Battery protection

1. Open **Settings**, then tap **Battery**.
2. Turn on **Battery protection** (on some models it's under **Settings > Device care > Battery**).
3. Choose a mode: **Basic** stops at 100 percent and waits until the battery drops to 95 before charging again; **Maximum** stops at a limit you choose — 80, 85, 90 or 95 percent.

GOOD TO KNOW

Stuck at 79%? That's normal

Samsung explains that with Maximum set to 80 percent, the phone resumes charging when it drops about 2 percent below the limit. So seeing 78 or 79 percent is expected, not an error.

Google Pixel: Charging optimization

1. Open **Settings**, then tap **Battery**.
2. Tap **Battery health**, then **Charging optimization**.
3. Turn on **Use charging optimization**.
4. Choose **Adaptive Charging** (finishes charging right before you usually unplug) or **Limit to 80%** (available on Pixel 6a and later).

GOOD TO KNOW

Pixel protects itself, too

Google says a Pixel needs a full charge about every 10th cycle to keep its battery readings accurate, even with Limit to 80% on. And if it's been charging for days or in high heat, it may hold at about 70–80 percent and show "Protecting your battery." You can tap **Charge to full** under Battery in Settings when you need 100 percent.

TIP

Other Android brands

Motorola, OnePlus and others have similar settings. Open **Settings** and search for "battery protection," "charging," or "80" to find them.

PART 7

Home Setups, Family & Help

A calm bedside charging spot, labels that end the "whose cord is this?" debate, recycling old batteries safely, fixing a phone that won't charge, and how to reach me.

CHAPTER 32

A Bedside Charging Setup

The nightstand is where most phones charge, and where a good setup makes the biggest difference: a phone you can reach in the dark, a cord that doesn't fall behind the bed, and nothing overheating under the covers.

A simple, safe bedside setup

1. Pick an outlet near the nightstand. Use a short extension cord or power strip rated for the purpose if the outlet is far away — never run cords under a rug.
2. Plug in **one multi-port USB-C charger** (about 30 to 65 watts) for your phone, watch and earbuds.
3. Use a **6-foot (2-meter) cable** so you can use the phone in bed while it charges, or a **charging stand** so it stands upright.
4. Clip the cable to the nightstand edge with a small cable clip so it doesn't slide behind the bed.
5. Keep the phone on the nightstand, not on the bed or under a pillow.

Make it easy to use at night

- A **stand** keeps the screen visible as a clock and lets you lift the phone off in one motion.
- A **magnetic** MagSafe or Qi2 stand finds the right spot by itself — great for unsteady hands.
- If the charger's light is too bright, a small piece of tape over it helps you sleep.

STAY SAFE

Never charge under a pillow

A phone or power bank charging under a pillow, blanket or mattress can't release its heat. Keep anything that's charging out in the open on a hard surface.

WHAT THIS DOES FOR YOU

Why it's worth setting up once

A tidy bedside setup means your phone is always charged in the morning, always within reach if you need to call for help at night, and never a tripping hazard.

TIP

Pair it with battery protection

Overnight is when battery-saving features do their best work. Turn on Optimized Battery Charging or a charge limit on iPhone (Chapter 30, *Battery Health on iPhone*), or Battery protection or Charging optimization on Android (Chapter 31, *Battery Health on Android*).

CHAPTER 33

Labeling Cables for the Family

When several people share a home, or grandchildren visit with their own gadgets, cords get mixed up fast. A few minutes of labeling saves a lot of "which one is mine?"

Easy labeling ideas

Method	How
Colored tape or washi tape	Wrap a small band near each plug. One color per person or per device.
Colored cables	Buy each person's cables in their own color.
Cable tags or bread-bag clips	Write "Mom's iPad" or "Watch" on a tag and clip it near the plug.
A label maker	Print a small flag label for chargers: "Laptop — 65W."
Write the watts on the charger	A bit of tape with the wattage, so nobody has to read the fine print.

A labeling plan that works

1. Gather every charger and cable in the house into one place.
2. Match each one to its device. Anything that doesn't match anything goes in a "mystery" bag.
3. Label each charger with the device it belongs to and its wattage.
4. Put a matching color on both ends of each cable.
5. Keep the mystery bag for a month. If nothing needed it, recycle it (see Chapter 34, *Recycling Old Batteries & Chargers Safely*).

TIP

Label the special ones first

Barrel-plug chargers (for routers, cordless phones and older laptops) are the ones that matter most, because using the wrong one can damage a device. Label those before anything else. See Chapter 7, *Micro-USB and Other Older Plugs*.

WHAT THIS DOES FOR YOU

Easier for helpers, too

Clear labels mean a family member, neighbor or caregiver can plug in the right thing without guessing — and you can tell someone over the phone, "It's the blue one."

CHAPTER 34

Recycling Old Batteries & Chargers Safely

Old phones, power banks, cables and chargers shouldn't go in the household trash or the curbside recycling bin. The EPA warns that lithium-ion batteries can be crushed in garbage trucks and sorting machines and start fires. Recycling them properly is easy and usually free.

Get batteries ready to drop off

1. Put a piece of **non-conductive tape** (such as clear packing tape or electrical tape) over the battery's metal terminals or contacts.
2. Put **each battery or battery-powered device in its own clear plastic bag**.
3. Keep them in a cool, dry place until drop-off — not in a pile in a metal can.
4. If a battery is swollen or damaged, keep it apart from the others and call the maker or your local household hazardous waste program for instructions.

Where to take them

- **The Battery Network** (the program formerly called **Call2Recycle**) has a free drop-off locator: enter your ZIP code at **batterynetwork.org/locator**, or call 1-877-2-RECYCLE.
- **Earth911** (search.earth911.com) lists recycling locations by ZIP code, too.
- **Your county's solid waste or household hazardous waste program** often holds collection days.
- Many electronics and home-improvement stores have battery drop-off bins; the locators show which ones near you take them.

GOOD TO KNOW

Call2Recycle has a new name

If you've used Call2Recycle before, it's now called **The Battery Network**. Same mission, same idea: thousands of drop-off sites for household and rechargeable batteries.

STAY SAFE

Before you recycle a phone or tablet

Back it up, sign out of your accounts, and erase it first using the reset option in the phone's **Settings**. Old cables and chargers can be dropped off as-is.

CHAPTER 35

Troubleshooting: "It Won't Charge"

A phone that won't charge is one of the most common charging problems, and the cause is usually simple. Work through these steps in order. Most of the time, you'll be done by step three.

1. **Check the outlet.** Plug a lamp into it, or try a different outlet. Power strips get switched off by accident.
2. **Try a different cable.** Cables are the most common failure, especially near the plugs.
3. **Try a different charger.** If another charger works, the first one is worn out.
4. **Look in the phone's port with a flashlight.** Pocket lint packs in tightly and stops the plug from seating.
5. **Restart the phone.** A software hiccup can stop charging; a restart clears it.
6. **Let it cool down or warm up.** Phones pause charging when they're too hot or cold.
7. **Leave a completely dead phone plugged in for 30 minutes** before deciding it's broken.

HEADS UP

Cleaning the port gently

If there's lint in the port, power the phone off and gently loosen it with a wooden or plastic toothpick. Never use metal pins, paper clips or liquids, and don't blow into it. If you're nervous, this is a perfect thing to have me do.

Charging, but very slowly?

- You may be using an old 5-watt cube or a USB-A port. See Chapter 11, *Fast Charging and USB Power Delivery*.
- A battery-protection setting may be holding it at 80 percent on purpose. See Chapter 30, *Battery Health on iPhone* or Chapter 31, *Battery Health on Android*.
- Wireless charging is slower; try a cable. See Chapter 20, *Wireless Charging Tips & Troubles*.
- Apps using lots of power (like maps or video) can slow charging. Close them or let it charge while idle.

GOOD TO KNOW

"Accessory not supported"

If your iPhone says an accessory isn't supported or certified, the cable is likely damaged, dirty, or not certified. Try a genuine or certified cable. See Chapter 29, *Safety Marks: UL, MFi and Friends*.

TIP

When the battery itself is tired

If a phone charges fine but drains very fast, the battery may be worn out after a few years. A battery replacement from the phone maker or an authorized repair shop often costs far less than a new phone.

CHAPTER 36

When to Call Bill

This guide should handle most charging questions. But some things are simply easier with someone sitting beside you, and that's what I'm here for.

Good reasons to call

- You'd like me to sort the charger drawer with you: match cords to devices, label everything, and recycle the rest.
- You're buying a new phone, tablet or laptop and want to know which chargers and cables you actually need.
- You'd like your phone's battery-protection and charging settings set up the right way.
- Your phone or tablet won't charge, charges slowly, or the battery drains fast.
- You're getting ready for a trip and want a travel charging kit that fits your devices and your airline's rules.
- You'd like a bedside or chairside charging setup that's safe and easy to reach.
- A charger, cable or power bank is getting hot, and you want a second opinion before using it again.

This kind of help is part of my **Device Training** service: we work with your own phone, tablet and chargers, at your pace, until you're comfortable.

SCAM ALERT

A reminder about "recall refund" calls

I will never call out of the blue asking for payment or remote access to fix a charger, and neither will a real recall program. If someone does, hang up and call a number you know is real.

How to reach me

- Call or text **(330) 200-8042**.
- Book a time online at **billshometech.com/book**.
- If you reach my assistant **Sophie** on the main line, she can answer simple questions and get you on my schedule.
- Bill's Home Tech serves **Portage County, Ohio**.

FROM BILL

What it costs

My help is **$49 remote · $99 in your home**. The guides themselves, like this one, are yours to use at no cost. I bring 30+ years of professional experience and plenty of patience to every visit.

— Bill

CHAPTER 37

Your Charging Cheat-Sheet

The most useful facts from this guide, all in one place.

Plugs at a glance

Plug	How to spot it
USB-C	Small oval, goes in either way. iPhone 15 and later, most Android phones, newer iPads and laptops.
Lightning	Thin flat tongue, no opening. iPhone 5 through iPhone 14, older iPads and AirPods.
USB-A	Flat rectangle, one way only. Older chargers, cars, computers.
Micro-USB	Tiny trapezoid, one way only. Older Android phones and gadgets.

Quick answers

I want to…	Do this
Fast-charge a recent iPhone	USB-C PD charger: 20W+ for most models; 40W+ for iPhone 17, 17 Pro and 17 Pro Max. See Chapter 12, *Fast Charging Your iPhone*.
Set a charge limit (iPhone 15+)	**Settings > Battery > Charging**.
Limit to 80% (Pixel)	**Settings > Battery > Battery health > Charging optimization**.
Battery protection (Samsung)	**Settings > Battery > Battery protection**.
Power bank size for most people	10,000 mAh — about 37 Wh.
Convert mAh to Wh	mAh ÷ 1,000 × volts (about 3.7). 20,000 mAh is about 74 Wh.
Flying	Carry-on only. Up to 100 Wh is fine; check your airline's limit on how many.
Recycle batteries	Tape the terminals, bag each one, drop off via batterynetwork.org/locator.

Five safety rules

1. Charge on a hard, open surface — never under a pillow or on the bed.
2. Buy chargers and power banks from known brands and trusted stores.
3. Stop using anything swollen, cracked, smelly or too hot to hold.
4. Keep phones and power banks out of hot parked cars.

5. Never put lithium batteries in the trash or curbside recycling.

Keep this handy

Item	Mine
My phone model	_____
Its plug (USB-C or Lightning)	_____
My main charger's wattage	_____
My power bank's Wh rating	_____
My airline's power bank limit	_____
Nearest battery drop-off	_____
Bill's Home Tech	(330) 200-8042 · billshometech.com/book

FROM BILL

You've got this

Chargers and cables only seem complicated until someone explains them. Now you know the plugs, the watts and the safety rules. Keep this guide handy, and if you ever want a hand, call or text me at **(330) 200-8042**.