

- » Understanding the different Apple Watch models
- » Discovering the many features of Apple Watch
- » Navigating the Home screen
- » Exploring different parts of Apple Watch
- » Understanding wireless capabilities and sensors

## Chapter **1**

# Watch This: Introducing Apple Watch

**S**o are you excited or what?

You're a proud owner of the trendy Apple Watch. Or perhaps you purchased this book in anticipation of picking one up or receiving it as a gift. Either way, thank you for reading *Apple Watch For Dummies* 2023 Edition. This easy-to-read book has one goal in mind: to teach you everything you need to know about Apple Watch. With simple step-by-step instructions, clear images, and accessible tips and tricks, this book will help you gain the most from your new wearable gadget.

In this chapter, I walk you through the basics of Apple Watch to help you discover what this teeny wrist-mounted computer is capable of doing. You find out about the different parts of the watch — on the outside and inside — as well as the layout of the Home screen. From ways to interface with content on the watch to the hidden wireless technologies to integrated sensors that track your moves, you'll soon have a clear picture of the 21st-century magic you're wearing on your wrist.

It's a beefy chapter, so let's get to it.

# Exploring the Apple Watch Collections

Apple Watch comes in a few sizes and configurations. For Series 1, Series 2, and Series 3 watches, you have a choice of a screen that's either 38 millimeters (about 1.5 inches) or 42 millimeters (roughly 1.65 inches).

For Apple Watch Series 6 and Apple Watch SE (a less expensive model introduced in 2020), sizes measure 40 mm (1.57 inches) or 44 mm (1.73 inches), but the watches have narrower bezels (borders) than their predecessors.

Apple Watch Series 7 (2021) and Apple Watch Series 8 (2022), has two sizes: 41 mm (1.61 inches) and 45 mm (1.77 inches). These watches introduced thinner bezels than all Apple Watches to date; therefore, the watch face is virtually all screen.

And finally, Apple introduced Apple Watch Ultra in 2022, featuring a super durable smartwatch with a larger 49mm case size, and other bells and whistles.



REMEMBER

You measure your screen from the top to the bottom, not diagonally — similar to how most screens in consumer electronics are measured (such as those on smartphones and tablets).

Although you likely bought a watch before buying this book, note that a few versions of Apple Watch are available today (the latest Apple Watch Series 8, is shown in Figure 1-1), and you can purchase a few accessories to customize your watch. For a more extensive discussion of the Apple Watch collections, or for ways to persuade a friend or co-worker that they need an Apple Watch, visit [www.apple.com/watch](http://www.apple.com/watch).

Excluding the various bands you can buy from Apple, the six Apple Watch options are

- » **Apple Watch Series 8:** The latest Apple Watch model (as of this writing) features the same design as the Apple Watch Series 7 (2021) but adds a new temperature sensor system (for insights into women's health), "crash detection" (through motion sensors and microphone), and a low-power mode that can squeeze up to 36 hours on one charge (with iPhone nearby).
- » **Apple Watch Series 7:** This 2021 model adds a bigger and tougher screen than its predecessors, faster wireless charging, all-new colors, an optional QWERTY keyboard for typing, and more. Choice of materials include aluminum, stainless steel, and titanium.

**FIGURE 1-1:** The newest Series 8 Apple Watch. This particular photo shows the stainless steel option with a gold finish.



- » **Apple Watch SE:** Much like the less expensive iPhone SE, Apple Watch SE — updated in the Fall of 2022 — is meant to give you premium features at a more affordable price. It includes a great-looking Retina display, new dual-core processor for faster performance, advanced sensors to track your movement, sleep, crash detection (2022 model), and more.
- » **Apple Watch Ultra:** Introduced in the Fall of 2022, this larger (49mm) Apple Watch is designed for sporty and outdoorsy types, featuring a more ruggedized body (titanium case), precision dual-frequency GPS, one extra (and customizable) action button, crash detection, and up to 36 hours of battery life. This watch also has three specialized bands for athletes and adventurers.
- » **Apple Watch Nike+:** Ideal for fitness types who like the Nike brand, this special edition Apple Watch (and special loop band) was designed to be your running partner. The watch synchronizes with the Nike Run Club app and Nike Training Club app. You can now add exclusive Nike watch faces to this edition of Apple Watch.
- » **Apple Watch Hermès:** A partnership between Apple and Hermès, this fashion-centric watch includes bold, colorful (and extra-long wraparound) leather bands and an exclusive new watch face.

You also have a ton of choice when it comes to materials you want in an Apple Watch and what style of band to choose. With Apple Watch Series 6, you can go with aluminum, stainless steel, titanium, or ceramic. Apple Watch Series 7 and Apple Watch Series 8 introduced five aluminum case finishes, along with a range of new band colors and styles. See Figure 1-2. The super-durable Apple Watch Ultra is made with titanium and supports three specialized bands.

**FIGURE 1-2:**

The Apple Watch Series 8 (left-top) and the new Apple Watch SE (left-bottom), which introduce several advanced features to the best-selling smartwatches. The first-ever Apple Watch Ultra (right), a larger and more durable option for active types, launched in the Fall of 2022.



In the fall of 2019, Apple also announced Apple Watch Studio, a website that lets you choose a case and pair any band. Try it out for yourself at [www.apple.com/shop/studio](http://www.apple.com/shop/studio).

## LOCATION, LOCATION, LOCATION

Despite there being nearly 200 countries on Earth, only 9 of them received Apple Watch when it debuted on April 24, 2015: Australia, Canada, China, France, Germany, Hong Kong, Japan, the United Kingdom, and the United States. Now dozens of countries sell and support Apple Watch — including models with cellular connectivity.

# Figuring Out What Apple Watch Can Do

Some people may question why they *need* a smartwatch. Perhaps you traded your watch for a smartphone years ago and now wonder why you'd go back to the wrist. One word: convenience. Not having to carry anything is pretty darn handy, which you soon find out when using your Apple Watch. Simply glance at your wrist to glean information — wherever and whenever you need it — not to mention the fact that your watch can tap you with a slight tactile vibration to let you know about something, such as a calendar appointment or a loved one giving you a virtual “poke.” Buying something at a vending machine or a retail store by simply waving your wrist over a sensor is also kind of awesome. Having an airline attendant scan a bar code on your watch's screen to let you board a plane? What a time saver.

Thus, you can keep your iPhone tucked away, preserving its battery for when you really need to access something with it. In fact, some Apple Watch models can make or receive calls and texts even without a smartphone nearby, which I get to in Chapter 5.

Perhaps because you wear it on your wrist and will likely glance at it multiple times throughout the day, Apple Watch will become an extension of yourself. When you strap it onto your wrist, you're not going to want to take it off. Now, that's personal.

As you discover in this book, Apple Watch has many, many features. Some of the main categories include time, communication, information, navigation, fitness, health and safety, entertainment, and finance (mobile payments). The following sections highlight Apple Watch's main features, but be aware that a few may require the GPS + Cellular model (and I indicate where).

## Watch faces

Instead of a regular watch that simply shows one face, you can choose what you see on your Apple Watch. The watch has many styles to choose from right out of the box, as well as numerous downloadable apps that customize the look of the face. You can also change the color of the watch face to match your outfit. Chapter 4 walks you through it all.

## Timers and alarms

Apple Watch also includes various stopwatches, timers, and alarms. Whether you use your fingertips or your voice, your Apple Watch can let you know when it's

been 30 minutes so you can pull something from the oven. Or you can time your friend doing laps in a pool — from the comfort of your lounge chair. Apple Watch also lets you set an alarm to wake you up in the morning. You can use the Timer app as a game clock, for example, to tell you and your opponent when your time is up in a round of Scrabble. Check out Chapter 4 for all the details.

## Caller ID or even calls

See who's calling by glancing at your wrist. Apple Watch displays the caller's name (Caller ID) or perhaps just a phone number (which often happens if that person isn't in your iPhone's Contacts). You can also use the Apple Watch microphone to record and send sound clips to friends. Some Apple Watch models — those advertised as GPS + Cellular — let you leave your iPhone at home and take or make calls right from your wrist when you're out! Heed the call, and go to Chapter 5 for details.

## Walkie-Talkie

What's more fun and quicker than a phone call? The Walkie-Talkie feature built into Apple Watch. As the name suggests, Walkie-Talkie lets you press to talk to someone else who has an Apple Watch. Let go to listen for the reply. 10-4, good buddy? I cover this feature in Chapter 5, which is about different ways to use Apple Watch to communicate.

## Health and wellness

In case you weren't aware, Apple Watch has been morphing into a powerful health device that can monitor what's happening inside your body. It sounds like science fiction, but the Apple Watch Series 6, Series 7, and Series 8 models include a heart-rate monitor (measured in beats per minute), electrocardiogram (ECG), and even a blood-oxygen monitor (to measure how well oxygen is being sent from the heart and lungs out to the rest of the body). Maybe not as impressive, Apple Watch can now detect when you're washing your hands — an important habit now more than ever because of the pandemic — and starts a 20-second timer. The new Mindfulness app features an enhanced Breathe experience, plus a new session type called Reflect. And watchOS9 adds a new Medication feature to its Health app.

## Emergency SOS

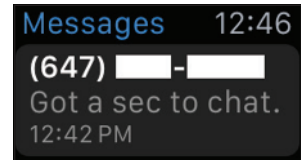
In a nutshell, the Emergency SOS feature built into Apple Watch calls for help when you can't. Whether it senses a troubling anomaly through the heart-rate or ECG sensor or detects a fall, Apple Watch can dial emergency services, notify your contacts,

send your current location, and even display your Medical ID badge for emergency personnel. I cover all this in Chapter 8, which focuses on fitness and health.

Similarly, Apple Watch Series 8, Apple Watch SE, and Apple Watch Ultra all add car “crash detection” (see “Crash detection,” later in this chapter), and includes extra temperature sensors tied to women’s health (see Chapter 8).

## Text messages and instant messages

You can read and reply to messages with Apple Watch, as shown in Figure 1-3. Hold your wrist up to read the message and lower your arm to dismiss it. Chapter 5 walks you through all the messaging functions of Apple Watch, including some models that don’t require your iPhone to be near you at all!



**FIGURE 1-3:**  
Read and reply to messages on your Apple Watch.

## Email

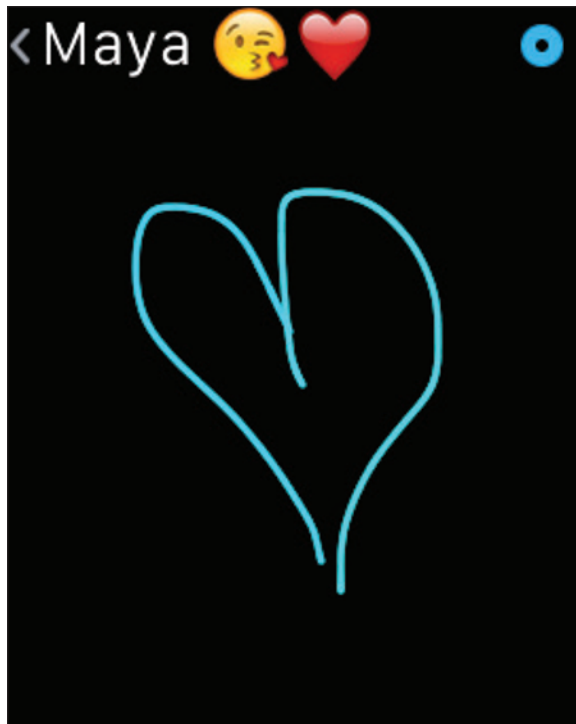
When an email comes in, you can read it on your wrist (scroll up and down the screen with your fingertip to see all the text), flag it as something to reply to later, mark it as read (or unread), or move it to the Trash. As with text messages and phone calls, you can transfer email from Apple Watch to your iPhone to pick up where you left off. I cover all this in Chapter 5.

## Wrist-to-wrist communication

Along with providing the Walkie-Talkie feature, your smartwatch lets you communicate directly with someone else’s wrist via a component called *Digital Touch*. Use your fingertip to draw something, such as the heart shown in Figure 1-4, and the person who receives it will see it animate — just as you drew it. Or why not send some virtual kisses to let someone know you’re thinking about them? As described in Chapter 5, you can even send your heartbeat to someone by pressing two fingers on the screen.

## Dock

Naturally, a wearable watch is a convenient way to stay on top of important information. Apple Watch has a cool feature called *Dock* that lets you quickly open your favorite apps or go from one app to another. To launch the Dock, press the side button and swipe up or down (or turn the Digital Crown button). See Figure 1-5. Chapters 3 and 6 discuss how to access Dock, customize what you see, and scroll through relevant information.



**FIGURE 1-4:**  
Sketch something on your Apple Watch and send it off to someone else's Apple Watch.



**FIGURE 1-5:**  
Dock allows you to open your favorite apps quickly or jump from one app to another.



## Calendars

Apple Watch also has a Calendar app (with reminders) so you can stay on top of events occurring throughout your day (or coming in the near future). Also, when you receive a calendar invitation, you can immediately accept or decline it on your wrist and even email preset responses to the organizer. Put Chapter 6 on your calendar for more information.

## Maps

Your wrist is an ideal place to glance at a map. Get turn-by-turn directions from your current location. You don't have to worry about having to stare at your wrist for visual cues (or fall down an open manhole in the process), because Apple Watch gives you a tap on the wrist to let you know when it's time to turn left or right. Navigate to Chapter 6 for more information. Beginning with Apple Watch Series 5, an integrated compass helps you navigate even further. (Unleash your inner Boy or Girl Scout Guide!) And with the latest operating-system update, watchOS 9, Maps includes cycling directions too.

## Siri

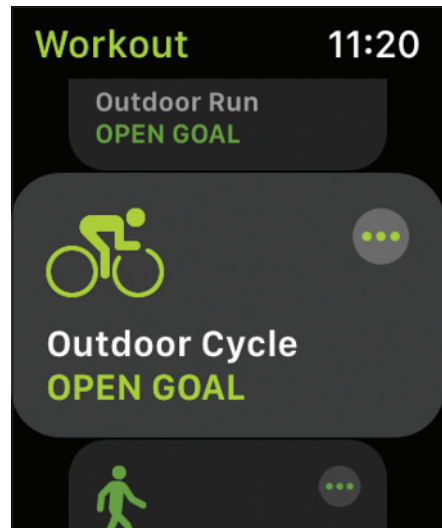
Just as you can talk into your phone, Apple Watch has a microphone, which means that you have access to your personal assistant known as Siri. Flip to Chapter 7 to find out more about what Siri can do for you. As the author of *Siri For Dummies* (John Wiley & Sons, Inc.), I share some of my favorite Siri tips and tricks you can master with ease. Finally, in 2020, Apple added language translation to Siri's long list of capabilities. A redesigned Home app lets you control compatible smart home devices using your voice on your Apple Watch.

## Fitness

One of the coolest applications for Apple Watch? Fitness. Chapter 8 looks at using the watch to measure your activity — steps, stairs, distance, time, calories burned, and heart-rate information — and to display it in a meaningful way on your watch and smartphone. I cover the Activity app, shown in Figure 1-6, and its three rings, which show you relevant information on your daily activity (or lack thereof!). On the other hand, the Workout app (shown in Figure 1-7) offers some workout routine options — including walking, jogging, running, and cycling — and shows real-time stats on your cardio session. Additionally, watchOS9 introduced new Workout options, so I take a look at those in depth, too.



**FIGURE 1-6:** The Activity app shows three rings that summarize your daily progress — so far.



**FIGURE 1-7:** The Workout app offers you some exercise routines to choose among.

## Music connectivity and more

Chapter 9 shows you how to use Apple Watch like a wireless remote. Control your music on your phone — from the convenience of your wrist — as well as listen to synced playlists on your watch *without* needing your iPhone (but with Bluetooth headphones). Along with talking about music streaming and downloads, I highlight how to manage podcasts, audiobooks, radio plays, and other audio. Chapter 9 also covers how to control Apple TV on your Apple Watch. (Yes, you can pause and play episodes of *Ted Lasso*. How awesome is that?)

## Apple Pay

Swiping your wrist at retail stores or at a vending machine is super-cool, and Chapter 10 covers all the ways you can use your Apple Watch in this regard. Your watch lets you buy products and services via Apple Pay, and you don't even need to have your iPhone with you.

## Other apps

Apple Watch is quite a versatile gadget, which means that other apps can help enhance its convenience. Chapter 11 looks at optional third-party apps you can download to further personalize the most personal gadget in the world.

## Other functions

Chapter 12 takes a closer look at some of the extra fun things you can do with Apple Watch. I cover using your wrist to snap a photo remotely on your iPhone, as well as look at photos on your wrist, including zooming in (because maybe you're bored in line at the supermarket and want to see some smiling faces or furry pets). I also discuss using Apple Watch as a gaming platform and tell you what's available for gaming.

## Bonus tips

Chapter 13 reveals the top ten things you should try with Apple Watch and, of course, how to pull them off with grace. I share the absolute coolest things this smartwatch can do and how to best demonstrate them to your friends — to the point they'll be boiling with envy.



For Apple Watch Series 7, Apple Watch Series 8, and Apple Watch SE, Apple says you could squeeze up to 18 hours of battery life out of Apple Watch (see [www.apple.com/watch/battery](http://www.apple.com/watch/battery)), but be aware that this result varies greatly, depending on how often you use the watch, the settings you choose (see Chapter 2), what apps you use, the outside temperature, and other factors. Apple says 18 hours equates to “all day” performance, which could include 90 time checks, 90 notifications, 45 minutes of app use, and a 60-minute workout with music playback from Apple Watch via Bluetooth. New in Apple Watch Series 8 is a Low Power mode option that disables some non-critical features and can double the battery life of Apple Watch to 36 hours (with iPhone nearby). Apple Watch Ultra also has a battery that lasts up to 36 hours, says Apple, and up to 60 hours in Low Power mode.

## Determining What You Need for Your Apple Watch

The original Apple Watch didn’t do too much on its own. Rather, it was more a companion device to an iPhone. Oh, sure, it could do a few things by itself — such as show you the time, count your steps, make payments, and play music — but a wirelessly tethered iPhone was required for the overwhelming majority of features.

With Apple Watch Series 8 and Apple Watch SE, you can go with one of two models:

- » **GPS:** This model is great for navigation.
- » **GPS + Cellular:** With this model, you can pay your mobile phone provider to unlock the eSIM (a virtual SIM card inside Apple Watch) so you can use the Apple Watch on the go like a phone. It can take calls, text messages, stream music, and more! In North America, this service costs \$10 per month because it’s added to your existing smartphone plan.

**Note:** For Apple Watch Ultra, there is only the GPS + Cellular option.

This book is ideal for whichever model you have, so not to worry. As mentioned before, you do need an iPhone to set up Apple Watch, even if you have the version that doesn’t require having one nearby to work. As you see in the next section, Apple also introduced Family Setup for those who own Apple Watch Series 4 (2018), or later. This feature lets family members who don’t have their own iPhones, such as younger kids, still use Apple Watch to make phone calls, send messages, and share location information. (After you set up a watch for someone in the family, you can use your iPhone to manage some of that watch’s capabilities.)

If you do own an older model (Series 1 or Series 2), you need at least an iPhone 5 to use Apple Watch. Those who own a Series 3, Series 4, Series 5, or Series 6 model need an iPhone 6 or newer. You also need to download and install the latest iOS operating system from Apple — whether you do it on your iPhone or via iTunes (on a PC or Mac) — and then connect the iPhone to your computer with a USB cable. After you download the latest operating system, an Apple Watch app — a white watch against a black background — appears on your iPhone’s Home screen, as shown in Figure 1-8.



**FIGURE 1-8:** Whether you own an Apple Watch or not, an Apple Watch app (shown at top right) appears on your iPhone’s Home screen.

In fact, you can install the latest watchOS update over the air (OTA) without using a physical connection at all!

## Getting to Know Apple Watch’s Home Screen

As shown in Figure 1-9, the main Home screen of Apple Watch is populated by several small bubble-like icons. This screen is quite neat, actually, not to mention functional. Simply tap an icon with your fingertip to open an app or slide around

the Home screen to see other icons pop up and grow larger. (You want the app to be centered on the screen for easy access.)



**FIGURE 1-9:** Press and move your finger around to see all the apps on your Home screen (or twist the Digital Crown button to zoom in and out).

If you're an iPhone user, the icons should be familiar to you; therefore, you know what built-in and third-party apps launch when you tap a specific icon. Table 1-1 shows some of the built-in apps. See Chapter 3 for more on the native Apple Watch apps.














**REMEMBER**

You no longer need a nearby iPhone to install new Apple Watch apps as long as you're running the watchOS 7 operating system or later. (You can tell which version you're running by choosing Settings ⇨ General ⇨ About on the watch.) In Chapter 11, I cover both ways to install new Apple Watch apps, whether you want to use an iPhone (or Mac/PC) or the Apple Watch Store, or download directly to the device.












And, of course, third-party apps have their familiar icons, such as a big *P* for Pinterest, a swoosh for Nike, a green leaf for the Mint app, and so on.

**TABLE 1-1****Built-In Apple Watch Apps**












App	Icon
Activity	
Alarms	
Calendar	
Find People	
Heart Rate	
Home	
Mail	
Maps	
Messages	
News	
Phone	

*(continued)*

**TABLE 1-1** (continued)












App	Icon
Photos	
Podcasts	
Reminders	
Remote	
Camera Remote	
Settings	
Stopwatch	
Walkie-Talkie	
Wallet	
Weather	
Workout	





App	Icon
App Store	
Apple Store	
Audiobooks	
Calculator	
Cycle Tracking	
Noise	
Now Playing	
Voice Memos	
Compass	
Blood Oxygen	
Shortcuts	

(continued)

**TABLE 1-1** (continued)

App	Icon
Sleep	
Memoji	
Find Items	
Find Devices	
ECG	
Mindfulness	
Music	
Stocks	
Timers	
Tips	
World Clock	

App	Icon
Contacts	
Medications	

Even if you don't install any third-party apps, you'll be blown away at all the apps preinstalled on your Apple Watch, many of which you'll no doubt use. See Figure 1-10 for a sampling of what's already included.



**FIGURE 1-10:** Especially with the latest watchOS9 operating system, your Apple Watch can do so much.

# Learning about Apple Watch's Parts

Okay, you're all geared up to test-drive all that Apple Watch can do, but if you're using it for the first time, you may not even know all the parts of the watch and what they do.

Fair enough. In this section, you discover the basics of the hardware itself. I start with a look at the various parts of the watch on the outside and what they do.

## Watch face

Regardless of which size you opted to go with — 40, 41, 44, 45, or 49mm — the Apple Watch face is entirely digital, so you won't find any buttons of any kind. Use your fingertip to move the icon bubbles and tap an app to launch it. You can also tap, press, and swipe inside an app to perform a task.



You don't need to press hard on these buttons or on the watch face. You want to minimize wear and tear on your new (and pricey!) gadget. Just a simple press on the buttons and watch face will do. And although Apple Watch Series 2 and newer are waterproof, try to avoid touching the screen and buttons with wet or damp hands. (Apple says, "We recommend not exposing Apple Watch to soaps, shampoos, conditioners, lotions, and perfumes as they can negatively affect water seals and acoustic membranes.") See Chapter 3 for more on these buttons and using your fingers with your Apple Watch.

## Digital Crown button

Seasoned watch owners are familiar with the small rotary dial on a watch's right side (left-handed people may flip the watch around so it's on the left side), which is used to wind the watch (an old-school one, anyway) or set the time. Apple Watch has one too, called the *Digital Crown* shown in Figure 1-11. It's both a button and a dial, so it can be pressed, tapped, or turned forward or backward, with each change resulting in a different action. See Chapter 3 for more on what the Digital Crown button can do.

## Side button

Along the side of the watch is a long button called the *side button* (how imaginative!), as shown in Figure 1-10 earlier in this chapter. From the Home screen and in any app, press this button to pull up your Dock (more on this later). Press and hold the side button to use SOS; double-click to use Apple Pay; or press and hold to turn your Apple Watch on or off.



**FIGURE 1-11:** If you wear Apple Watch on your left wrist, the side button is on the right side of the watch case. The Digital Crown button is the ridged dial.

The side button is flush with the side of the watch, except the larger Apple Watch Ultra, which protrudes a bit (which helps if you're wearing gloves outside).

## Action button (Apple Watch Ultra only)

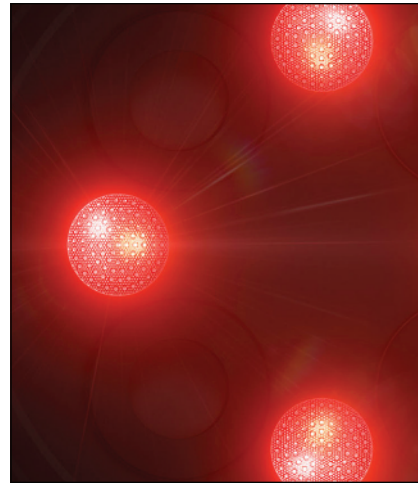
Among the many features of the Apple Watch Ultra is an extra button not available on the other Apple Watch devices. On the left side of the watch is an orange and pill-shaped “Action” button, which sits between the pinhole speaker and the siren (see below). This button is customizable, so it can perform a function you assign to it.

Until you change it in the Settings area of Apple Watch, pressing and holding the button will activate the 86-decibel siren that can be heard from up to 600 feet (180 meters) away, says Apple, to be used in the event of an emergency. During workouts, the Action button will enable other fitness-related features.

## Back sensors/charger

On the back of Apple Watch, as shown in Figure 1-12, are multiple sensors to monitor your heart rate, blood-oxygen level (on some models), and more. In fact, the addition of blood-oxygen monitoring beginning with Apple Watch Series 6 changed the back crystal underneath the watch; now it's made up of four LED clusters and four photodiodes. See Chapter 2 for more on the sensors and the charger.

**FIGURE 1-12:** The sensors on the back of Apple Watch can, among other things, calculate your heart rate and measure your blood-oxygen percentage.



## Watch band

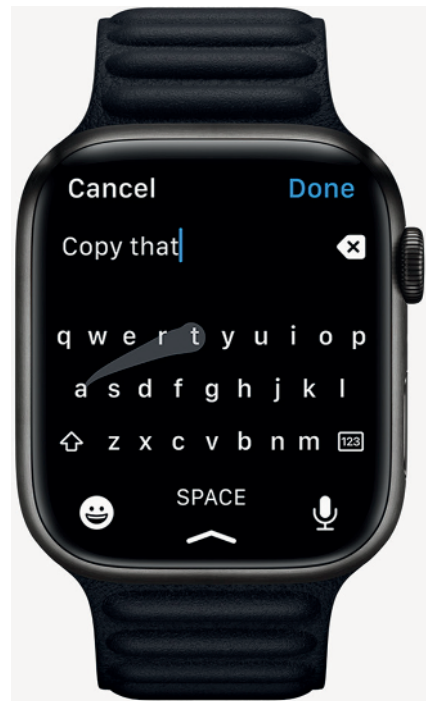
Every wristwatch has a band to keep the screen snug on your wrist. You chose a specific band when you bought Apple Watch — a leather strap, a link bracelet, a classic buckle, a silicone band, and so on — but you can change bands later if you desire. Apple continuously introduces new bands, not to mention all the third-party ones available. It's all about selection and customization.

## Using Apple Watch's Touchscreen

Just as you can interface with a smartphone, tablet, and laptop in different ways, based on the task at hand, Apple Watch gives you three ways to use the small screen on your wrist:

- » **Tap:** Tapping Apple Watch with one finger performs the same function that you'd expect on a smartphone: It selects whatever you're tapping, such as an icon to launch an app, a song to play a track, a link to a website, a photo to enlarge, or virtual buttons, such as on a calculator. On the Home screen, you tap and slide your finger around to move the icon bubbles. A tap is like a left-click on a computer.
- » **Press:** Apple Watch knows the difference between a quick tap and a longer press, usually when you need to open some additional menus. Think of a press as a kind of right-click. Tapping a song plays the track, for example, but pressing and holding it opens a set of options: Shuffle, Repeat, Source, and AirPlay. The technology that senses the difference between a tap and a press is called *Force Touch*.
- » **Swipe:** Many areas of Apple Watch — including Dock — and most of the apps you can access let you swipe left and right or up and down to navigate among screens. In Workout mode, for example, you can see time elapsed and heart-rate info, but swipe to the side to pull up music that you can pause and play. Swipe one more time, and you'll see more options, including the ability to lock your watch so you don't accidentally tap the screen during rigorous exercise, pause your counter, and so on.

Available only on the larger Apple Watch Series 7, Apple Watch Series 8, and Apple Watch Ultra is the option to pull up a small QWERTY keyboard (like a computer keyboard's layout) to type words. The keyboard's QuickPath feature also supports swiping from letter to letter to form words. Apple says that it uses machine learning to predict the word you're typing. See Figure 1-13.



**FIGURE 1-13:** On Apple Watch Series 8, you can swipe between letters and let artificial intelligence predict your next words to speed your typing.



TIP

Some features are activated by two fingers pressed on the screen. In Chapter 5, you can find out how to record and send your heart rate or heartbeat to a loved one's Apple Watch.

# Understanding Apple Watch's Wireless Functions and Internal Sensors

Oh, Apple Watch, you cleverly hide so much of your magic under your skin.

Apple uses an integrated computer described as a System in Package (SiP, for short) inside the Apple Watch. The SiP includes the main processor (the main engine that drives the watch's performance), along with memory, storage, support processors for wireless connectivity, sensors, and input/output tech. Yes, that's a lot of geek speak, which you don't need to know about to use the watch.

Beginning with Apple Watch Series 8, the company is using a new chip called the S8, which can provide wearers all-day battery life yet still power the larger, more advanced watch display.

Apple Watch indeed houses a good number of wireless radios beneath its surface, including Bluetooth, Wi-Fi, GPS, and NFC. To understand what they do, check out the following sections.

## Bluetooth 5.0

Bluetooth makes a local wireless connection between two or more devices. Just as your wireless headset is paired with your smartphone so you can make hands-free calls, Apple Watch wirelessly communicates with a nearby iPhone to let you see texts on your watch, receive phone calls, control your music on your phone, and more. Bluetooth 5.0 works with devices up to 800 feet away (about 240 meters), which is significantly farther than in earlier versions. If you have an Apple Watch that supports cellular connectivity and pay for the service, you can perform many of these features — making calls, sending texts, and accessing online music — without having an iPhone nearby.

## Wi-Fi

Even if you don't have a cellular model, Apple Watch features Wi-Fi, which gives it online connectivity even when no iPhone is in sight. As long as you're on a wireless network, such as your home's Internet connection or a coffee shop's hotspot, you can access such information as email, live sports scores, mapping information, and so on. A feature called *Continuity* — introduced in iOS 8 — allows you to receive messages and take calls on multiple iOS devices (such as answering a call on your iPad) as long as you're in range of your Wi-Fi network, and Apple Watch has this feature too. See Chapter 5 for details on how to take advantage of Bluetooth and Wi-Fi connectivity.



## Cellular

As I mention previously in this chapter, newer Apple Watch models (Series 6, 7, 8, and SE) are available as GPS or GPS + Cellular. As you can guess, the GPS + Cellular watches cost a little more, but they let you make a call, send a text, and stream Apple Music from your wrist — all without your iPhone. You'll need to pay your mobile phone provider an extra amount per month (usually about \$10) to activate the eSIM inside Apple Watch. That is, you don't need to insert a physical SIM card, like the one in your iPhone, to access the LTE and UMTS cellular bands.

Apple Watch Ultra only ships in a GPS + Cellular option.

Apple Watch now supports worldwide roaming.

Beginning with Apple Watch Series 5, emergency calling works in countries outside the United States (see Chapter 5).

## NFC

*NFC* (near-field communication) is a short-range radio technology (like Bluetooth) that has numerous applications but is most commonly associated with mobile payments, similar to waving or tapping your iPhone on a contactless terminal at retail locations (or a compatible vending machine) to make a secure purchase. Apple Watch also uses NFC to make a digital handshake with the terminal to complete the transaction. Yep, it's all in the wrist. This feature is part of Apple Pay, Apple's mobile payment solution for secure cash- and cardless payments. Check out Chapter 10 for more on Apple Pay.

## GPS

Except for the first Apple Watch (Series 1, from 2015), Apple Watch has an integrated GPS chip to identify its location on Earth down to a few meters of accuracy. Therefore, when coupled with mapping applications, GPS can help you see your location on a map, get directions from point A to point B, look for local businesses of interest, and more. GPS can also help with tracking fitness data when measuring steps won't help (such as in cycling). Along with the accelerometer (discussed next), built-in heart rate sensor, and Wi-Fi, Apple Watch's GPS can help measure distance traveled. Jog on over to Chapter 8 to learn more about the Activity and Workout apps.



TIP

Ever want to take a screen shot of something on your Apple Watch, such as an impressive day of physical activity? Press and hold the side button; then tap the Digital Crown. You'll hear a shutter button, the watch face will flash white, and the image will appear wirelessly in your iPhone's photo gallery. You may need to enable screen shots first by opening the Apple Watch app on an iPhone and tapping My Watch → General → Enable Screenshots.

## Ultra Wideband

While there aren't a lot of use-cases for it yet, Apple added Ultra Wideband (UWB) technology to its Apple Watch Series 7 and Apple Watch Series 8. Similar to iPhones with UWB (beginning with iPhone 11 in 2019), this feature provides more precise location and spatial awareness. As you'll see in Chapter 10, you can unlock a compatible car without even having to hold the iPhone or Apple Watch near the door lock.

## Accelerometer, gyroscope, barometric altimeter, and compass

Like other smartwatches and activity bands on the market, Apple Watch has an accelerometer that measures movement, whether you're lifting the watch to your face to turn on the screen; lowering your wrist to decline a call; or calculating fitness activities, including steps taken (like a 21st-century pedometer), total distance traveled, time spent exercising, and estimated calories burned. Beginning with Apple Watch Series 3 (2017), the watch also has an integrated barometric altimeter for measuring elevation (counting the steps you climb or descend) as well as calculating altitude for those who ski, hike, or climb mountains. Beginning with Apple Watch Series 6, the altimeter is always on, providing all-day, real-time elevation data on your wrist.

With the Apple Watch's accelerometer and gyroscope sensor, Apple Watch Series 4 (2018) and newer models can detect whether you've fallen, and you can initiate a call to emergency services (or dismiss the alert). If you're unresponsive after 60 seconds, Apple Watch automatically places the emergency call and sends a message with your location to your emergency contacts. *Note:* This feature is different from speaking to a live operator if you call, as you would with a service such as Philips Lifeline, but this feature is very handy to have on your wrist nonetheless (and you have no monthly fees to worry about).

A compass has been added to Apple Watch Series 5 and Series 6 models, always pointing you north inside apps like Maps, and there's a dedicated Compass app too. (Cue the song "Go West" by the Pet Shop Boys or the Village People first!)

## Heart-rate sensor

A custom heart-rate sensor included with Apple Watch helps you in two ways.

- » **Gauging your exercise intensity and tracking overall calorie burn:** (This data is an estimation based on info you input one time, such as your height, weight, gender, and age.) Apple Watch listens to your heartbeats per minute and shows you data on the screen — if and when you call for it.
- » **Tracking your heart rate throughout the day:** Apple Watch can alert you if it detects unusually high or low heart rates — and yes, you can set the parameters if you want, even if you don't feel symptoms. Behind the watch are multiple sensors that measure your pulse through your skin. Going beyond fitness are fun applications, such as the one that lets you share your heartbeat with someone — felt on their Apple Watch — to show you're thinking about them. See Chapter 5 for how to share this information to your heart's content.

## Electrocardiogram (ECG)

Beginning with Apple Watch Series 4 (except Apple Watch SE), all Apple Watch models include an electrical heart-rate sensor that can take an electrocardiogram (ECG) by using an ECG app; the built-in sensor and the electrodes are included in the Digital Crown button. You take an ECG reading by placing a finger on the Digital Crown while wearing Apple Watch; the reading is completed within 30 seconds. The ECG app tracks whether your heart is beating in a regular pattern or whether you have signs of atrial fibrillation — a clear indicator of serious health problems.

## Blood-oxygen monitor (pulse oximeter)

Beginning with Apple Watch Series 6, your wearable device is capable of detecting blood-oxygen levels. When you tap the Apple Watch app, green, red, and infrared LEDs shine light into your wrist, and photodiodes measure the amount of light reflected back. Then advanced algorithms calculate the color of your blood, indicating the amount of oxygen present. Wow. Blood-oxygen levels between 95 and 100 percent are considered to be healthy — a lower percentage *could* indicate compromised heart, lung, or brain functionality — but be sure to consult your doctor. In fact, Apple stresses that the Blood Oxygen app is not intended for medical use; it's designed for general fitness and wellness purposes.

## Ambient light sensor

Finally, Apple Watch has an ambient light sensor under the glass. This sensor samples the environmental light falling on the screen and automatically adjusts the brightness up or down to improve viewing comfort so that the screen isn't too dim or too bright, based on where you are. An ambient light sensor also helps regulate the power that the display uses, thus squeezing more battery life out of the watch.

In fact, beginning with Apple Watch Series 5, the Retina screen is always on — just dimmed — until you turn it toward your face to read the time or other info (except Apple Watch SE devices, which do not have this feature). In previous Apple Watch models, the screen goes black when you're not looking at it, and it takes a split second to wake up and turn on when you turn it toward you.

## Crash detection

You likely know about fall detection (see Chapter 8) but now Apple Watch offers crash detection for drivers and passengers.

Apple Watch Series 8, Apple Watch SE (2022 model), and Apple Watch Ultra have added crash detection, which relies on an advanced sensor-fusion algorithm from Apple that leverages a new, more powerful gyroscope and accelerometer on Apple Watch. Tested in crash test labs with common passenger cars — including simulated head-on, rear-end, side-impact accidents, and rollovers — your Apple Watch can detect a car crash, call emergency services (and your chosen contacts), and share your location data. In addition to motion data, crash detection uses the barometer, GPS, and the microphone on iPhone as inputs to detect the unique patterns that indicate whether a severe crash has taken place (such as if the air bag is deployed). Neat!

## Temperature sensors

Apple Watch Series 8 and Apple Watch Ultra offer temperature sensing, with a two-sensor design: one sensor on the back of the watch, nearest the skin, and another just under the display (reducing bias from the outside environment). Nighttime wrist temperature can be a good indicator of overall body temperature, but Apple says the primary focus is on women's health, such as retrospective ovulation estimates. Knowing when ovulation has occurred can be helpful for family planning. These estimates can be viewed in the Health app. Temperature sensing also enables improved period predictions. See Figure 1-14.

**FIGURE 1-14:** Apple Watch Users who utilize the new temperature-sensing capabilities in Apple Watch Series 8 or Apple Watch Ultra can receive retrospective ovulation estimates and improved period predictions, which can be helpful for family planning.



## Tapping with Apple Watch's Haptic Feedback

You can tap Apple Watch's screen, and guess what? It can tap you too.

Like videogame controllers that vibrate when your soldier gets shot or some smartphones and tablets that buzz slightly when you tap a letter on the virtual keyboard, Apple Watch employs haptic technology to apply light force to your

skin to alert you to relevant information. Apple's *Taptic Engine* is a linear actuator inside the watch that produces discreet haptic feedback.

Consider this slight vibration to be a third sense (touch), along with sight and sound, to give you information. The physical sensation of a tap tells you something, such as a warning that an important meeting is about to start, without your even having to look at your wrist. This feature can also be a silent alarm clock to wake you up in the morning instead of bothering your significant other. Or it can transmit the feeling of your loved one's heartbeat even though they may be miles away.

What's more, Apple Watch can tap different patterns based on who's reaching out to you (such as two taps for your spouse and three taps for your boss). Or perhaps the haptic pattern tells you what the information is: one tap for the time on the hour, four taps for a calendar appointment, and so on. Neat, huh?

In the near future, Apple Watch's haptic feedback may let you know about important health information, perhaps working in conjunction with sensors. Imagine if someone living with diabetes could get a haptic tap to tell them it's time to use insulin, based on their body's blood-sugar levels.