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TAKE CONTROL OF

iPhone Photography

by JEFF CARLSON

$14.99

2ND EDITION

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Read Me First

Welcome to *Take Control of iPhone Photography, Second Edition,* version 2.0, published in March 2026 by alt concepts. This book was written by Jeff Carlson and edited by Joe Kissell.

This book is the friendly, step-by-step guide to capturing great photos using the iPhone, the camera that's always with you, taught by an author and professional photographer who has been taking mobile photos on iPhones since the first model.

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What's New in the Second Edition

Apple brought a new Liquid Glass interface to the iPhone experience with iOS 26, but they also changed how the Camera app works. All the basics are still there, just moved around in ways that aren't easily discoverable.

But this isn't solely an interface update; I've expanded some chapters and written new ones that cover the iPhone photography experience. Here's what's new in this edition:

- Overall, the book has been updated for iOS 26 and the new Camera interface, including new screenshots throughout. In many places, that required rewrites for how some features work, such as the new approach to using advanced shooting controls like the Timer or Night Mode.
- Added AirPods as a way of triggering the shutter. See Take a Photo.
- When you tap the screen to specify a focus point, I added a note that this also locks exposure. See Tap to Focus.
- The iPhone 17 and later include a new front-facing camera with Apple's Center Stage feature for adjusting to the number of people in a selfie shot. See Take a Selfie.
- Also added notes about using the Apple Watch and AirPods to trigger the rear cameras. See Tips for Better Selfies.
- Apple removed a clever, but subtle, histogram indictor from the Camera app's interface in iOS 26, so I deleted a sidebar in Control the Exposure that described it.
- Night mode still works the same, but the way you switch between modes has changed in iOS 26. See Photograph in Low Light.
- There's a neat tip for quickly restarting a panorama photo. See Capture a Panorama.
- Expanded the section on capturing still photos while shooting video. See Record a Video.

- Also in the same chapter, I added a new section about recording sound, including how to use AirPods as external wireless microphones.
- Some recent iPhone models feature a new Dual Capture mode when recording video. See Record in Dual Capture Mode.
- Added a new chapter about working with the Shared Library feature that lets you capture photos and share them immediately with people you've invited. See Store Photos in a Shared Library.
- Wrote a new chapter about camera accessories such as add-on lenses and filters. See What About Camera Accessories?

Orienting the Orientation

The iPhone is designed to be held in vertical orientation, also known as "portrait" or "tall" orientation. But of course when you're taking photos, you'll frequently want to shoot images in horizontal orientation, also "landscape" or "wide." The Camera app interface adapts somewhat when you change orientations, but not dramatically.

That presents a terminology problem: when I'm talking about the buttons at the "top" of the app when the phone is held vertically, they shift to the left when the phone is turned counterclockwise and held horizontally (or to the right when turned clockwise). I don't want to have to say "tap the button at the top/left-or-right row of buttons" every time.

So, let's agree that the "top" buttons are the ones that appear above the viewing area when held vertically and at left when held horizontally; and the "bottom" buttons are the ones that appear below (vertical) or to the right (horizontal) of the viewing area (**Figure 1**).

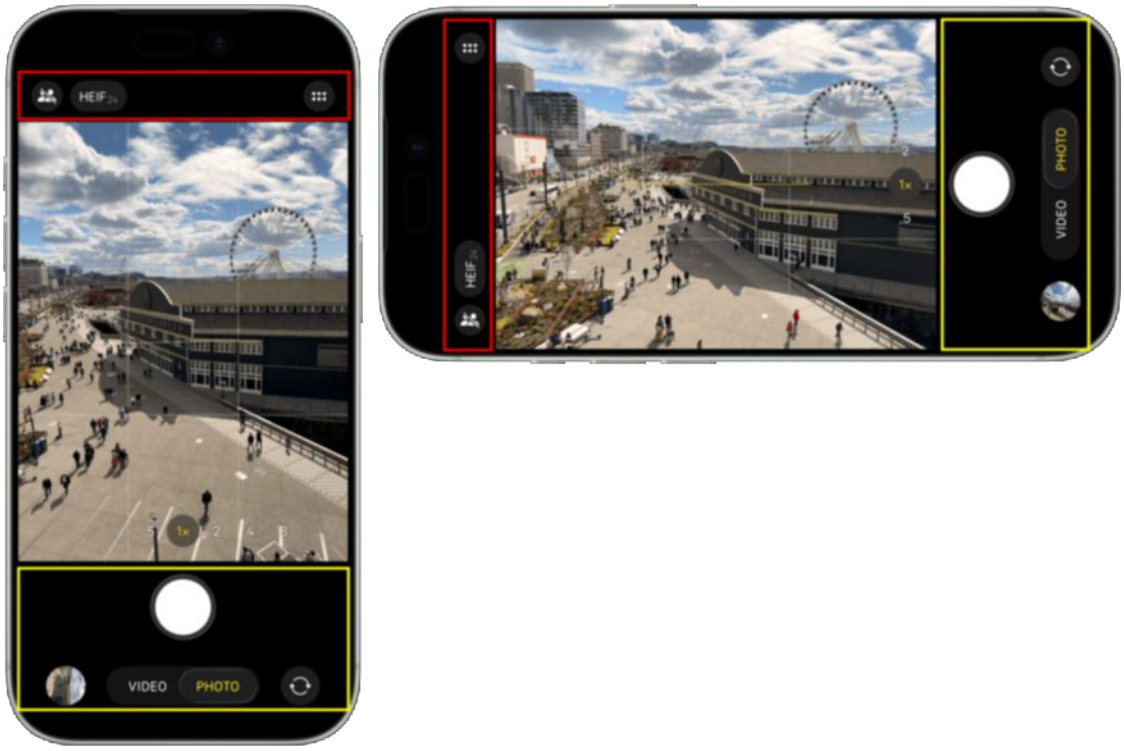

Figure 1: I've marked the "top" buttons in red and the "bottom" buttons in yellow.

Introduction

You may not consider yourself a "photographer," but guess what? You are! We're all photographers now. The iPhone (and other smartphones, but we're focusing on Apple's darling) has given every owner a world-class camera that also happens to run apps and connect to the outside world.

But because the iPhone doesn't have interchangeable lenses, settings dials, or a large image sensor, it's usually not considered a "real camera." I'm here to debunk that idea. As photographer Chase Jarvis famously quipped, *the best camera is the one you have with you*, and the iPhone is always nearby.

I've used lots of different cameras in my capacity as both a writer and a professional photographer, and I can tell you: some photos I've made with the iPhone rival shots captured with traditional digital cameras. And the image quality of the latest iPhone cameras is noticeably better than older models. Sure, we could pixel-peep at the results and identify technical benefits to using dedicated cameras. But that means little if you miss a photo opportunity because the camera wasn't with you or you needed time to set it up.

So how do we create great photos using the iPhone? The key, I think, is to consider how deliberate we are when we take photos with it. The iPhone camera system is designed to make a great image using very little effort, giving you a good quality baseline on which to build. As you understand more of how the camera works, and what to look for when composing and setting up shots, you'll see your photography improve. I want you to make *good* photos and capture memories, so in addition to some of the technical details of using the iPhone's camera system, you'll find plenty of advice I've learned as a photographer.

I've organized this book to build your knowledge as you go. Apple designed the Camera app to be as user-friendly as possible, but a lot of complexity is hiding around the edges. I don't want to overwhelm anyone by jumping right into zoom levels and resolution and other

aspects of capturing a photo. So although the chapter Take a Photo might seem pretty basic, know that it's the foundation for what we'll build on later when we get into the nitty-gritty of topics such as how to Control the Exposure and Why and How to Shoot Raw.

You'll also find that each chapter tends to be short and describes just one action or topic. I'm capable of rambling on as much as any other writer, but I want you to be able to quickly jump to the topic you want to learn, not hunt for it. When you want to Capture a Portrait, figure out how to Choose a Zoom Level, or Take a Selfie, the information is right there in its own section. In some sections I impart advice I've learned as a photographer, but I'm not trying to be encyclopedic—usually it's the type of things I'd suggest if you and I were taking photos together.

Lastly, I need to set a few baselines. I'm mostly focusing on the built-in Camera app, since that's what most people use and it's Apple's default option for taking photos. For third-party camera apps—and why you may want to use them—see Use a Third-Party Camera App.

In terms of iPhone hardware, most generations of iPhone models are still in use, but we have to draw a line somewhere, so this book covers the iPhone 12 (released in 2020) and later. Although Apple adds new features to every new model, the core basics of the camera features have remained throughout the years.

More important, these models all run iOS 26, the current version, which is what I'm using for this book. iOS 26 is a visual departure from earlier versions, so be aware that if your iPhone is still running an older (iOS 18 and earlier) system, the Camera app will look different. It still works much the same, though, so I'm confident you can figure out the features I describe.

When significant features diverge—for example, the automatic Portrait mode present only in the iPhone 15, iPhone 15 Pro, and later models—I call those out.

Also, when I talk about the iPhone or iPhone Pro, I also mean the larger-sized iPhone Plus and iPhone Pro Max models. That way I'm not

listing, for example, “the iPhone 17 Pro and iPhone 17 Pro Max” every time I need to reference the Pro models.

But what about the iPad? You’ll find that many of the core photo and video features also appear in the Camera app of recent iPad models, but since most people are making photos with iPhones, I don’t go into detail on iPad photography.

Lastly, this book is all about *creating* photos, not about editing or organizing them. For those topics, see Jason Snell’s *Take Control of Photos* (for details on using Apple’s Photos app for Mac, iOS, and iPadOS) or my book *Take Control of Your Digital Photos*, which goes into more detail about organizing photos and discusses a number of additional apps beyond Photos.

iPhone Photography Quick Start

We rarely sit down and read the manual before taking the first pictures with a new camera. That applies even more to the iPhone camera system, which is designed so you can make photos right away. However, many people don't progress beyond that initial snapshot stage, or they run into pockets of complexity.

I don't want you to miss out! Yes, the iPhone is easy to use, but there's an amazing amount of technology under that simplicity that's designed to make great photos, not just casual snapshots.

Start making photos:

- Let's begin with the absolute basics and build up from there, as we Start with a Snapshot.
- The iPhone is great for capturing spontaneous photo moments. To make sure you can get to the camera quickly, learn All the Ways to Open the Camera App.
- Walk through the steps of how to Take a Photo (and Take a Selfie) to make sure you're not missing anything important.

Make better photos:

- Photography is a mechanical art, but it's still an art. To make better photos, you need to learn how to Compose Your Shot and Control the Exposure, particularly since the iPhone approaches these somewhat differently than cameras you may have used in the past.
- The Phone is not just a single camera, it's a *system* of multiple cameras. Choose a Zoom Level when composing your photos, and learn how the cameras interact with each other in curious and sometimes unexpected ways. For this it will be helpful to Understand Optical and Digital Zoom and know Why and How to Shoot Raw photos.

- Not every iPhone camera shares the same image resolution—in fact, you may need to take extra steps in order to Choose a Resolution and Capture High-Resolution Photos.
- Smartphone cameras like the iPhone are pioneering ways to take better images in the dark. Learn how to Photograph in Low Light using Night mode and the built-in flash.

Get creative with camera features:

- Some iPhones can get *really* close to subjects and still focus sharp. Learn how to unlock this world in Get Close Using Macro Mode.
- Apply a soft, blurry background to photos of people when you Capture a Portrait, taking advantage of the ingenious Portrait mode.
- Broaden your view from side to side when you Capture a Panorama, or add some motion magic when you Capture in Live Photo Mode.
- If you're looking for a specific mood or visual style to the photos you capture, be sure to learn how to Use Filters and Photographic Styles.
- Maybe the Camera app isn't giving you a capability or the control you want. In that case, explore the possibilities offered by developers; see Use a Third-Party Camera App.

Capture moments with video:

- Capturing video is straightforward, but it's important to Understand Video Format Basics to make sure you know what you're getting.
- For the grand overview of the video system, including features like Action mode, Spatial Video mode, zooming while recording, and more, learn how to Record a Video.
- Apple's melding of photography and computational processing leads to some interesting features not found in most traditional cameras. Learn how to Record a Slo-Mo Video, Create a Time-Lapse Video, Record in Cinematic Mode, and Record in Dual Capture Mode.

Start with a Snapshot

Do you know someone who jumps right into something without reading the documentation or even the brief Start Here card that outlines the basics? Yeah, sometimes that's absolutely me. So here I want to start with the barest of fundamentals: walking through the steps of taking a snapshot and seeing where that image goes. Feel free to skim or skip ahead if this is stuff you already know.

Take a Snapshot

When I say "snapshot," I'm referring to a photo that is made quickly, capturing a moment without a lot of planning or deliberation. Grab your iPhone and follow along:

1. Unlock your phone, locate the Camera app, and tap it to open it.
2. Make sure you're in Photo mode: the mode names appear below the large shutter button. If PHOTO is not selected and colored yellow, swipe left or right on the image to change modes (**Figure 2**). You can also swipe on the button itself.

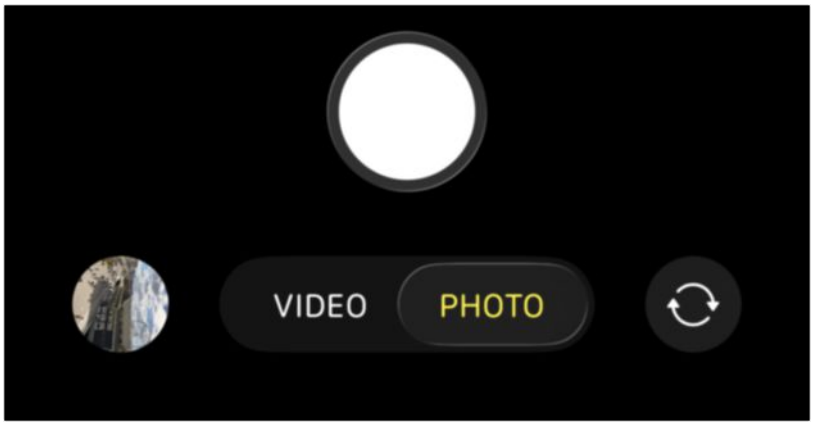

Figure 2: Select Photo from the mode options.

3. Hold the phone in its normal vertical orientation, or rotate the phone 90 degrees to its horizontal orientation. The camera will automatically adjust according to how the phone is being held; look

at the buttons, such as the Camera Control button or the thumbnail of the last image captured, to make sure they're properly oriented. If they're not, the photo could be recorded in the wrong orientation, though that can be fixed later. If the interface doesn't change, turn the phone again until the orientation is correct.

Tip: The Camera app works independently of the iPhone's Orientation Lock feature, which many people turn on to prevent apps from switching orientation modes.

4. The camera will likely focus on whatever is most prominent in the scene. To choose another area, tap once on that area.
5. Tap the big white shutter button to take the photo.
6. A thumbnail of that picture appears at the bottom corner near the shutter button.

Review the Image

The image you just captured is saved in the Photos app. You can view it directly from the Camera app, though, like so:

1. Tap the thumbnail image to view your new photo larger (**Figure 3**).

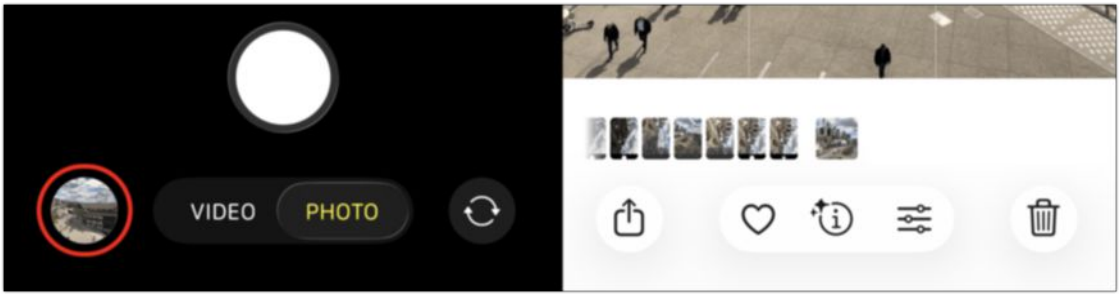

Figure 3: Tap the thumbnail (left) to view the image you just shot (right) as well as previous captures.

You can also see previous photos by swiping from left to right on the image, or by scrolling the filmstrip below it.

Let's Talk About the Camera Control

People—well, photographers mostly—have been asking for a hardware shutter button since the original iPhone model. If you're holding the phone in its horizontal orientation, your fingers are already in roughly the same position as when you hold a traditional camera. Apple eventually added a setting to use the Volume Up button as a makeshift shutter (after a third-party camera app came up with the idea first), and that's worked fine for years (see Trigger the Shutter).

But now the iPhone 16 and iPhone 16 Pro and later models (though notably *not* the iPhone 16e or iPhone 17e) include a physical button, the Camera Control. It's a dedicated shutter button, situated below the Sleep/Wake button on the right edge of the device, but it's also a whole lot more. (It's also used to Activate Visual Intelligence, an AI feature.)

How the Camera Control Works

Although the Camera Control is a physical button that depresses when you push down on it, the top is a capacitive touch control similar to a laptop trackpad (or the old MacBook Pro Touch Bar). It senses finger movements as well as light pressure on the surface. Instead of merely triggering a camera capture, it can lock focus with something similar to a half-press and switch among options in a special menu of photographic controls. You can have most of the camera settings right there under your finger so you don't need to touch areas of the screen to make changes.

Note: I include the Camera Control throughout the book in areas where it applies, such as Control the Exposure, so for now I'm covering just the basics of how to use it. And if you don't own an iPhone that includes the button, feel free to skip this chapter.

Open the Camera App

Press the Camera Control once to quickly launch the Camera app. This works when the iPhone is locked or unlocked. If you find you're opening the app when you don't mean to due to accidental button presses, you can configure this action to be triggered by a double press; see Configure the Camera Control Settings.

Capture a Photo

Just like pressing a traditional camera's shutter release, with the Camera app open press down on the Camera Control to snap a photo. Unlike a typical camera, if you press and hold the button, the camera records video until you release it.

Display and Use the Camera Control Menu

Press lightly on the Camera Control to bring up a special menu near it—the button responds with a gentle buzz of haptic feedback. When the menu is visible, slide your finger across the length of the control to change the menu selection.

For instance, by default the Zoom control is active. When you slide your finger, the zoom level increases or decreases (**Figure 4**).

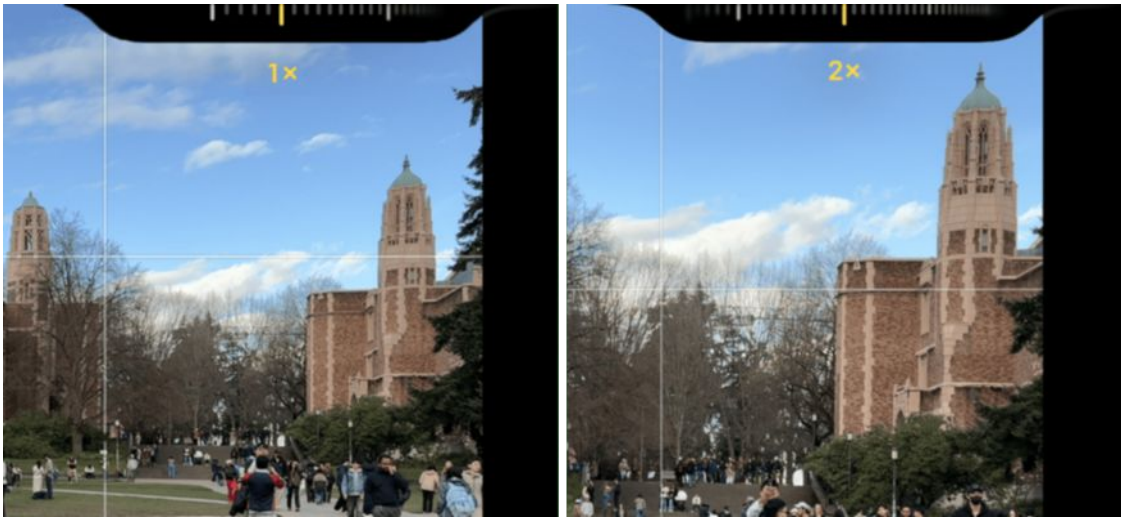

Figure 4: When you lightly press the Camera Control, its menu appears onscreen near the button, shown at the top here. Here I've slid my finger to change the zoom from 1x (left) to 2x (right).

All the Ways to Open the Camera App

We started by unlocking the iPhone and tapping the Camera app to open it and take a picture—but I rarely actually do that. I often want to capture a spontaneous moment, which means I want to open the app as quickly as possible. So instead, I prefer to swipe the Lock Screen or press the Camera Control on my iPhone to get to the Camera app directly. Those are just three methods. It's a little ridiculous how many ways exist to open the app. Try the following methods to open the Camera app and see which ones work best for you:

- **Tap the Camera button on the Home Screen.** When the phone is unlocked, the Camera app is typically located on the first Home Screen, but you can place it on any screen or in a folder of apps.
- **Tap the Camera app button in Control Center.** Swipe down from the top-right corner of the screen to open Control Center, and then tap the Camera button. On the iPhone SE and models with Touch ID, swipe up from the bottom to access Control Center.
- **Swipe right-to-left on the Lock Screen.** Start at the right edge of the screen and swipe left. This works even if the phone is locked. I find this to be the quickest way to open the Camera app.
- **Touch and hold the Camera button on the Lock Screen.** When you tap the screen and view the Lock Screen, touch and hold the Camera button that appears in the bottom right corner. Just tapping the button doesn't work—it's designed to avoid accidental touches when locked. (The iPhone SE, however, does not include a dedicated Camera button.)
- **Press the Action button.** Starting with the iPhone 15 Pro and iPhone 15 Pro Max, Apple replaced the Ring/Silent switch with a new Action button. To use it to open the Camera app, go to Set-

tings > Action Button and set the behavior to Camera (**Figure 6**). You can also specify which type of photo to capture by tapping the Photo menu. Then, even if the phone is locked, press and hold the Action button for a second to open the Camera app.

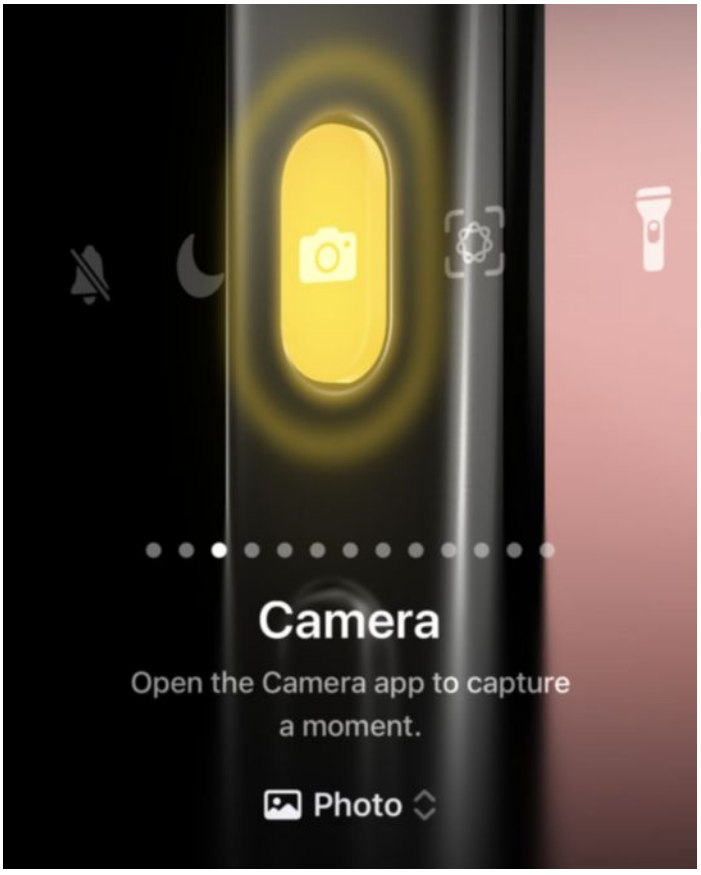

Figure 6: On the iPhone 15 Pro and later, configure the Action button to open the Camera app.

- **Use the Camera Control.** On an iPhone with the Camera Control, press it once (see Let's Talk About the Camera Control).
- **Ask Siri.** If you like to talk to your iPhone, say, "Hey Siri, open the Camera." You can also speak phrases such as "take a photo" or "take a selfie" (which opens the app and activates the front-facing camera). This also works when you invoke Siri on an Apple Watch.
- **Back Tap.** Double-tap or triple-tap the back of your iPhone to open the Camera app. To set this up, go to Settings > Accessibility > Touch > Back Tap. Select Double Tap or Triple Tap and then choose Camera from the System list.

Take a Photo

In Start with a Snapshot, we quickly ran through the steps of making a casual capture. Let's go through the process again more deliberately, this time including some of the other options that present themselves.

Open the Camera app using any of the methods outlined earlier, and point the lens at a scene or subject. I recommend doing this in an area where there's plenty of light so we don't need to worry about the flash coming on or other considerations related to when we Photograph in Low Light.

First, a Quick Pre-Check

The Camera app is awash with buttons and controls, some of which pop up depending on what's in front of the lens (**Figure 8**).

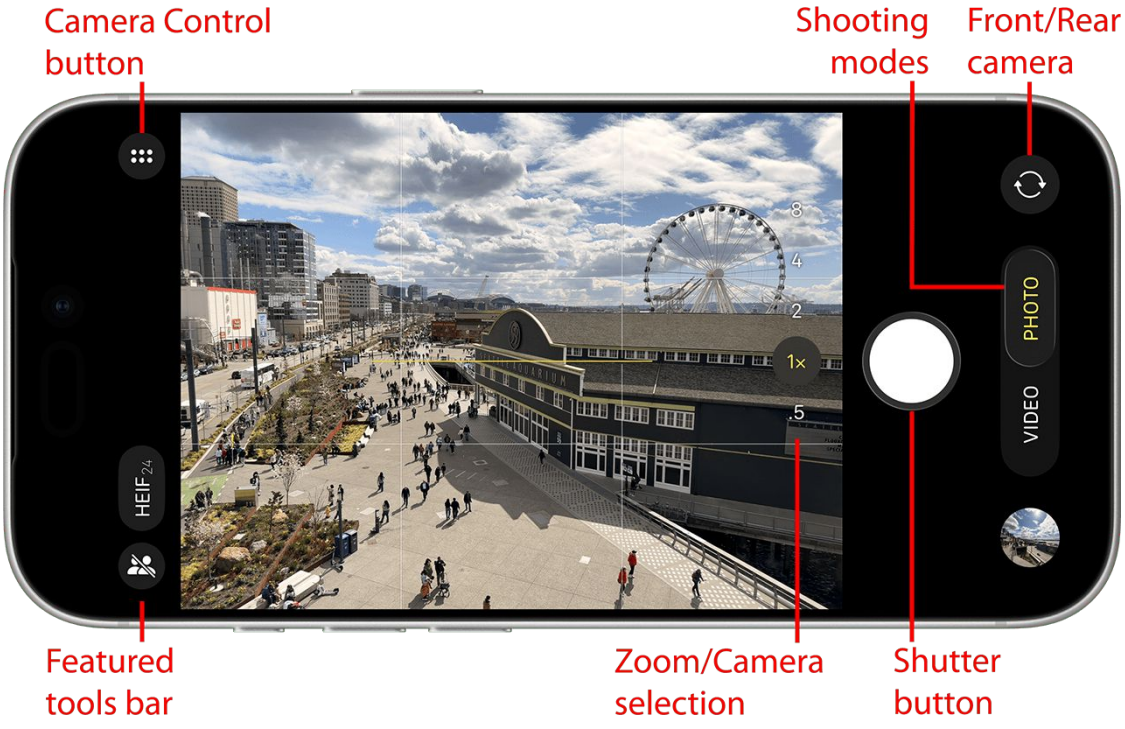

Figure 8: A quick overview of the Camera interface.

Open the Camera app and do the following pre-check steps to avoid confusion:

1. Make sure the Photo mode is active. The word PHOTO should appear in yellow and be enclosed in a rounded button frame.
2. Make sure the zoom level is set to 1x; it appears in yellow with a circle around it. If another zoom level is selected, tap the 1x button (on some iPhone Pro models you may see 1.2x or 1.5x; tap that until it reads 1x).
3. Turn off Live mode if it's active. Tap the Camera Control button (or tap Photo), and then tap the Live mode button so it appears with a diagonal slash through it (**Figure 9**). (I cover how to Capture in Live Photo Mode later.) Tap outside the control panel to hide the controls.

Figure 9: More options, including Live mode, are available in this panel that's normally hidden.

Note: Yes, you read that right: Apple calls the icon that brings up other shooting options the Camera Control button, while also naming the physical button on most models from the iPhone 15 Pro onward the Camera Control. Apple, please get your hardware and software teams talking to each other.

Take a Selfie

At one point not too long ago, taking a picture of yourself smacked of vanity. You carried a camera to capture the world around you, not photos of yourself. But you are also part of this world, and especially in today's social media environment, someone, somewhere, wants to see you. Selfies are also a great way to share a moment with friends or family at an event, showing that you were there. How many camera-carrying folks have libraries full of images of everyone else but us?

The front-facing camera on your iPhone is perfect for selfies in terms of convenience. It's not the highest-quality camera available, but it's good enough for most situations.

How to Capture a Selfie

Open the Camera app and do the following:

1. Tap the Camera Chooser button to switch from the cameras on the back of the phone to the camera located at the top of the screen (**Figure 13**). You'll know it's active when you see a green light appear near the camera…oh, and *your face staring back at you*.

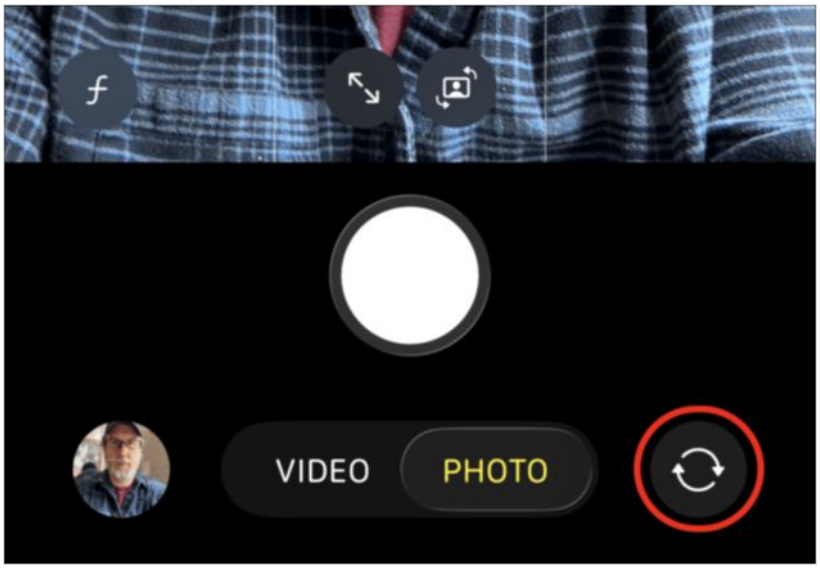

Figure 13: Switch between back and front cameras.

2. To change the field of view (wider or narrower), tap the Selfie Zoom button inside the preview area. You can also pinch in or out to change the view.

3. Tap the shutter button or one of the volume buttons to take the picture.

The same controls explained in Trigger the Shutter, Capture Photos in Bursts, and Record a Video apply to the front-facing camera, too.

You can also opt to capture a Portrait Selfie, which applies the Portrait mode depth effect to the shot automatically (**Figure 14**). Or, activate the front-facing camera and then switch to the Portrait mode. On iPhone 15 and later models, the depth information is automatically saved with the image; see Capture a Portrait.

Figure 14: A Portrait Selfie blurs the background, even when the Photo mode is active (left). When the Portrait option is off (right), you can see more detail, like the framed photo on the back wall.

Compose Your Shot

You'd think photographic composition would be easy: point the camera at interesting stuff, make sure that stuff is within the frame, hit the shutter button, and then wait patiently for the inevitable Pulitzer nomination. And yet good composition is one of the most difficult aspects of photography. Done well, a photo directs the viewer's eyes to tell a story. Done poorly, the image is just a bunch of haphazard shapes sharing space. Composition takes practice and time, which is a great excuse to go make more photos.

Learn Composition Basics

Photo composition is a big topic—you can find entire books dedicated solely to it. For our purposes, I'm going to look at the *process* of composing a photo, which touches on some of the core principles.

Imagine we've just arrived at a photogenic spot, which could be a scenic outdoor vista, a popular vacation destination, a family event, or even a spare few minutes on a sidewalk enjoying a sunny day. Wherever it is, something inspired you to open the Camera app to take some photos.

What Catches Your Eye?

iPhone in hand, what grabs your attention? It could be something specific like an animal at the zoo, or less defined, such as golden diffused light coming through a window. Look around and see what interests you.

That sounds vague, I know, but it's a starting place. Part of photography is developing an eye for photographic situations. Your brain, which is always processing your surroundings, becomes more receptive to situations that could make for a good photo. Sometimes it's easy and directed: you're taking a picture of a friend, for instance, who is the focus of the photo. Other times are more amorphous: you've taken

yourself to a photogenic location to catch the sunset, but numerous possible compositions present themselves. In that case, what draws your eyes first?

Identify a Subject

Nearly every photo is about *something*. Your friend above would be an obvious subject, but at the sunset location the subject could be the setting sun itself, a tree in silhouette, rocks reflecting the late afternoon light, flowers in the foreground…there are lots of possibilities.

In the latter example, I find it's easy to get overwhelmed. Too many good options! So then it's a matter of picking one. Start with the tree, take some photos, and then move on to other things in the scene (**Figure 17**). (What's great about that situation is that most of the items in a landscape photo don't move, so the only pressure on you is the time you have before the sun sets.)

Figure 17: Sometimes the subject is obvious, like this lighthouse.

Control the Exposure

When you learn the foundations of photography, at some point you run across the "exposure triangle." Creating a properly exposed photo with a traditional camera involves a balance of three settings:

- **Shutter speed:** How long the shutter stays open, controlling the amount of light that hits the sensor.
- **Aperture:** The size of the lens opening, which also affects how much light gets through. However, each iPhone camera has a fixed aperture, so you cannot control this variable; see Capture a Portrait for a more detailed discussion.
- **ISO:** The sensitivity of the image sensor; a higher ISO setting boosts the power to the sensor, which can improve performance in low-light settings, but at the expense of adding more digital noise to the photo.

To capture fast action, for instance, you may need a fast shutter speed, but to allow enough light to hit the sensor and not end up with a dark image, you combine that with a high ISO and (in traditional cameras) a wide-open aperture.

An iPhone, though, handles all of that automatically. Although that works fine in most situations, sometimes you may want to manually adjust the exposure. In fact, overriding the Camera's calculated exposure settings requires slightly more work.

Drag the Exposure Slider

The Camera app includes two methods to override the automatic exposure settings. The first way adjusts the exposure for just the photo you're taking:

1. Tap an area to focus on or to set the exposure. The focus box appears.

2. Drag the Exposure slider next to the focus box to increase (up) or decrease (down) the exposure value of the shot (**Figure 27**).

Figure 27: Drag the Exposure slider to darken or brighten the scene for that shot.

That setting holds until you tap the shutter button or you recompose the scene by moving the iPhone.

Tip: To lock the exposure level, touch and hold the area you're basing the focus and exposure on until you see AE/AF Lock at the top of the screen. You can then adjust the brightness using the Exposure slider next to the focus box.

Set the Exposure Control

The second way to override the automatic exposure settings is to use the Exposure control. The difference between it and the Exposure slider is that the latter sticks between multiple photos.

Choose a Zoom Level

If I'd wanted to be more technically accurate, I would have called this chapter "Choose a Camera." When you choose a different zoom level, you're actually switching between the iPhone's rear-facing cameras; the .5x mode, for instance, engages the Ultra Wide camera.

You've probably at some point pinched two fingers on the screen to zoom in or out; this pinch-to-zoom gesture has become second nature to iPhone users. However, let me make the case that you should never—or I'll be generous and say rarely—zoom like this. See Understand Optical and Digital Zoom.

Note: On older models that include a single rear-facing camera, like the iPhone SE, the only option for zooming is to drag a zoom slider or pinch with two fingers. That's a digital zoom, however, which I elaborate on in Understand Optical and Digital Zoom. The iPhone Air, iPhone 16e, and iPhone 17e are exceptions, because even though they each have just one camera, they offer a 2x optical zoom by cropping their high-resolution sensors.

However, because most people are thinking zoom, not hardware, the Camera app's interface presents a control marked as multiples of the Main camera's view. (There's another reason Apple structures zoom this way, which I get to shortly.)

Note: When we're talking zoom, we're referring to the *field of view*, or how much of the scene in front of you fits into the camera frame. The .5x Ultra Wide camera's field of view reveals more area than the 1x Main camera's area.

Change Zoom Levels

To zoom in or out, tap one of the zoom buttons in the preview area. On all recent iPhone models with more than one camera, you'll see .5x and

1x for the Ultra-Wide and Main cameras, respectively. The iPhone Pro models, which are equipped with a third Telephoto lens, also include a 2x, 3x, 4x, 5x, or 8x view depending on the model (**Figure 30**).

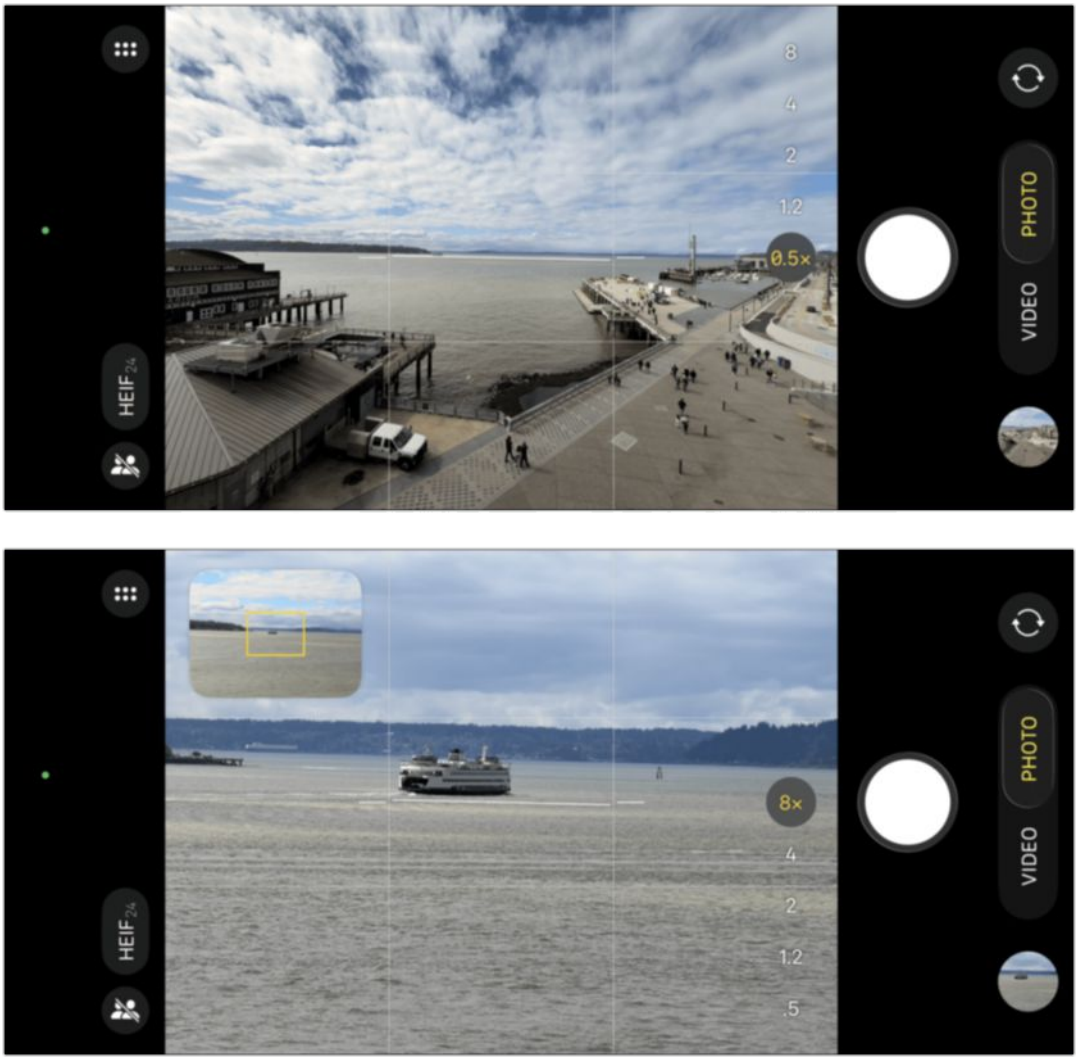

Figure 30: Both photos were taken standing in the same spot, seconds apart, using an iPhone 17 Pro: the .5x Ultra Wide camera (top) and the Telephoto camera at 8x (bottom).

Additionally, the iPhone 14 Pro and later models that contain a high resolution sensor offer a 2x view that is a crop of the Main camera (see Choose a Resolution for more details on this feature).

With the Front camera active, tap the Selfie Zoom button to toggle between normal and a slightly wider view.

Choose a Resolution

Until recently, resolution on the iPhone wasn't even a consideration. Every camera's sensor output a 12 MP image, or 4032 by 3024 pixels at the default 4:3 aspect ratio. Now, the iPhone 14 Pro and all models after the iPhone 15 include a 48 MP Main camera, multiplying the resolution options. (If you own an iPhone 14 (non-Pro) or earlier, you can skip this chapter.)

Understand Resolution on iPhone Cameras

The first thing to keep in mind is that, depending on the iPhone model, higher resolutions are possible only when using the Main camera; on most models, the Ultra Wide, Telephoto, and Front cameras all still record at 12 MP. On an iPhone 16 Pro, the Ultra Wide camera uses a high-resolution 48 MP sensor. The iPhone 17 Pro has 48 MP sensors on all rear cameras and an 18 MP sensor on the Front camera.

Why bother with higher resolutions? Aren't the 12 MP cameras good enough? Yes, usually. But higher resolutions record finer details, such as objects in the background, and they can be cropped later without the worry that you're throwing away those details as you would with lower-resolution images.

But just switching to the Main (1x) camera doesn't necessarily mean you're capturing photos at 48 MP. In fact, you need to take extra steps to get the highest resolution!

Let's break down the options, and forgive me for throwing around a lot of numbers in this chapter. This will all make sense in the next few pages, I promise:

- On the iPhone 15, iPhone 15 Pro/Pro Max, iPhone 16, iPhone 16e, iPhone 16 Pro/Pro Max, iPhone 17, iPhone 17 Pro/Max, iPhone 17e,

and iPhone Air, the default capture resolution is 24 MP, even though the Main camera sensor is capable of 48 MP. (There's also an option to capture at 12 MP instead.)

- On the iPhone 17 Pro/Pro Max, even though the Telephoto camera is 48 MP, if you select its highest optical zoom of 8x, you get a 12 MP image. (See Understand Optical and Digital Zoom.)
- On the iPhone 14 Pro and later models, you can capture 48 MP by enabling the Max mode (and please don't confuse this "Max" with the larger iPhone model named Max).

Capture High-Resolution Photos

This is where we get into the idea of deliberate photographing that I mentioned at the beginning of the book. You can set a default and stick with it and lead a perfectly happy photographic life. Or you can understand how the resolution settings work and take advantage of situations where capturing the full image quality leads to better photos.

The Main camera has a 48 MP sensor, so wouldn't you want to use all that resolution every time? Not necessarily. It requires more storage space—around 75 MB for a single image if you're shooting in raw—and more processing time to capture. Capturing with an iPhone 14 Pro exhibits a short but still noticeable lag when you take a 48 MP photo, which is lessened in iPhone 15 Pro and later models. If those tradeoffs are acceptable, then by all means shoot at the highest quality.

Choose the Default Format

Starting with the iPhone 15 series is the ability to capture 24 MP photos using the Main camera (I mentioned this in What's Happening Behind the Scenes.) This is a curious resolution, because the camera is actually recording a series of *12 MP* images to blend together using Apple's fusion technology, and then combining that result with a single 48 MP image to arrive at a 24 MP photo.

Why and How to Shoot Raw

The Camera app can capture photos in raw format, though it's a feature reserved only for Pro models since the iPhone 12 Pro. But what does that mean to shoot in raw?

When any camera—iPhone or traditional—takes a picture, the camera sensor records the light that hits it. That light is converted from pure data into a format that our eyes understand, assigning colors and brightness values to pixels to reproduce the image you captured. In most cases, that image is processed using algorithms designed to make the image look as you saw it. Then the image is compressed to conserve space and saved as a HEIF or JPEG file.

But let's go back to the very first step: the light being absorbed by the sensor. When you shoot in raw format, a file is created that includes only that raw data without any of the subsequent processing. At that point it's just data, not even an image.

However, there's a lot of data in that file. None of it is thrown out to reduce the file size, and typically the data represents a larger *dynamic range*—the amount of tone and color detail from pure black to pure white. As a consequence, the files tend to be much larger than HEIF or JPEG files. Photographers who shoot raw, in general, expect to do further editing later.

Not every iPhone photo I take is going to be processed later, so I typically capture in the default HEIF format and switch to raw when I'm being more deliberate about my photo subject. A gorgeous sunset, for instance, is a great reason to shoot in raw because it tends to have very bright and very dark areas that can be manipulated in software later. Most of my other daily photos don't need that kind of scrutiny.

Note: It's common to see "raw" capitalized as "RAW" as if it's an acronym. It doesn't stand for anything. Even Apple's implementation, "ProRAW," is capitalized for no reason other than it looks impressive.

How to Capture Raw Images

The iPhone fortunately makes it easy to jump back and forth between raw and HEIF modes. First, set up the control that makes it happen: Go to Settings > Camera > Formats and under Photo Capture turn on ProRAW & Resolution Control (iPhone 14 Pro and later Pro models) or Apple ProRAW (earlier models) if it's not already on.

Next, in the Camera app, you should see a button showing the file format and resolution, such as "HEIF 48". To activate raw capture, tap that button and then tap RAW; optionally pick a resolution, such as 48 MP (**Figure 39**).

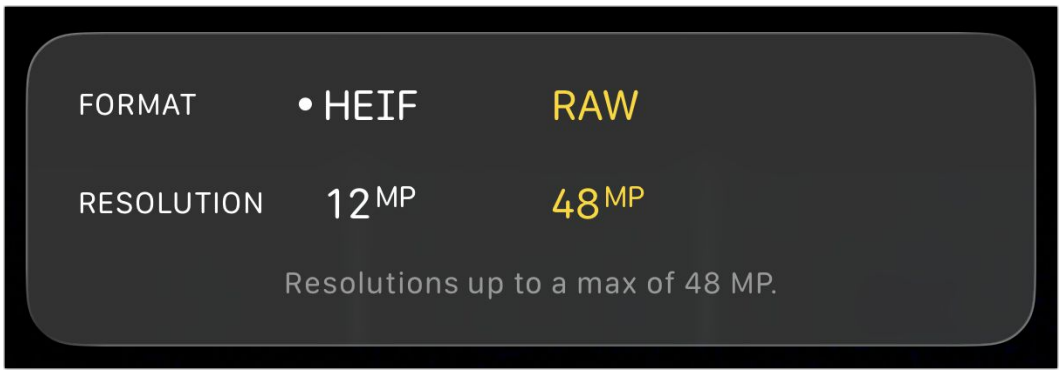

Figure 39: Choose a format and resolution at the top of the Camera app.

Now the images you make are saved in ProRAW at the highest resolution your device is capable of. That creates 48 MP raw photos when using the Main camera (1x zoom) on iPhone 14 Pro and later Pro models, the Ultra Wide camera on the iPhone 16 Pro, and all three rear cameras on the iPhone 17 Pro. At other zoom levels, you get 12 MP raw photos.

Photograph in Low Light

Dark environments are some of the most difficult situations for any digital camera, even before you factor the small lenses and sensors in the iPhone cameras. A sensor records light, and when there isn't much of it, you typically need to turn to other ways of adding illumination, such as adding alternative light sources or shooting long exposures that record more light over a period of time.

In this context, it's remarkable to learn that smartphones are some of the best low-light cameras around. Thanks largely to computational photography, the iPhone can reveal details in dark scenes you didn't even know were there.

Night Mode

When the iPhone camera system determines there isn't enough light to make a well exposed image, it automatically kicks into Night mode. This feature captures a long exposure shot to record more light, then applies Deep Fusion computational photography technology to blend other exposures to provide detail and reduce digital noise.

The Night mode button turns yellow and indicates the number of seconds it requires to capture an image (**Figure 41**).

Figure 41: When conditions are dark, the Night mode indicator turns yellow and estimates the capture time.

Note: On all Pro models since the iPhone 12 Pro, Night mode works when shooting in Portrait mode.

Take a Night Mode Photo

To shoot in Night mode, frame your composition and tap the shutter button as you normally would. During the exposure, you'll see "Hold Still" at the top of the screen and a timer countdown to indicate how much time is left.

The camera's motion sensors adjust for camera movement during that time, but it can also use your help. You'll see a pair of crosshairs: subtly adjust the position of the phone during the exposure so they overlap as close as possible.

Tip: Is there no Night mode button on your screen? If conditions are so bright that it's not needed, the button doesn't appear. Because the Main (1x) camera has a wider aperture than the other cameras, shooting with it in low-light situations might not trigger Night mode. Even at night, I've made photos solely using the Main camera without Night mode assistance.

Adjust the Night Mode Exposure Time

The seconds indicator is an estimate of how much time the Camera app thinks it needs to get a good exposure. You have some manual control over this setting with three modes: Auto, Max, and Off.

Tip: The Max time is usually 10 or 15 seconds, depending on the light levels. For longer durations, mount the iPhone on a tripod or secure it in a way that it's completely still to increase the maximum amount to up to 30 seconds.

There are three ways to choose a different Night mode duration. The first is quickest but doesn't give you every option: tap the Night mode button to toggle between Auto and Off.

The second option gets you to all the options with fewer taps:

1. Touch and hold the Night mode button.

Capture Photos in Bursts

Anyone who has taken photos of children or pets knows that it's nearly impossible to keep them still. And if you're trying to capture a family get-together, good luck getting a shot with everyone looking at the camera with their eyes open.

You can improve the odds of getting good photos by shooting in Burst mode. Instead of one image, the iPhone captures lots of photos in one pass. And when I say "lots," I mean *dozens* of exposures every second. It's a digital firehose of photos that you'll be happy to sort through.

Take Photo Bursts

Here's where you might fight against photographic muscle memory. On most cameras set to burst mode, you hold the shutter button to capture successive shots. That was the same behavior on the iPhone, long ago, and it still trips me up occasionally. Now that action is a shortcut to start recording video (see Record a QuickTake Video).

Fortunately, you don't have to switch to a specific drive mode to shoot in bursts, as is the case on traditional cameras. Two methods trigger the feature:

- Drag the shutter button to the left and hold your finger there until you want to stop capturing. The number of shots taken appear in the space where the button usually resides (**Figure 46**).

Figure 46: You can take hundreds of pictures in just a few seconds!

- Press and hold the Volume Up button. This option needs to be first enabled in Settings > Camera: turn on Use Volume Up for Burst.

Surprisingly, there's no option to set the Camera Control to fire in burst mode. Pressing and holding the button when the Camera app is open starts recording a video. (When the iPhone is locked, pressing and holding Camera Control serves to Activate Visual Intelligence.)

Or, Hammer that Shutter Button

You can also capture "bursts" the old fashioned way by repeatedly tapping the shutter button. The iPhone includes a preference in Settings > Camera called Prioritize Faster Shooting. Apple says this feature "modifies how images are processed," but it's not clear what that means. I suspect it's either not doing the full image processing pipeline in the background, or it's deferring that processing (likely the blending of exposures) until you've finished shooting.

View Photo Bursts in the Photos App

After capturing a burst of images, you might expect your Photos app to be littered with lots of similar shots, but that's not the case. Each burst session appears as a group; look for the appearance of stacked images in the Photos app thumbnails. From here you can pick your favorite shots within a group and optionally discard the others.

Tip: Another way to access bursts in the Photos app is to tap Collections, scroll down to the Media Types section, and select Bursts.

To access the images in a burst, do the following:

1. Tap the thumbnail for a burst, which opens to a single image and a label that says Burst (*number of* images) (**Figure 47**). That image is the one the iPhone has determined is the best of the lot.

Get Close Using Macro Mode

I appreciate that the iPhone can take great photos using hardware that technically doesn't compare to most cameras; tiny sensors, tiny lenses, no aperture control, etc. I keep bringing up this comparison, I know, but some features really make the point for me.

Macro photography, which involves extremely close-up views of subjects, usually demands specialized hardware. When you're focusing on individual flower petals or insects, you need a lens with a very small focusing distance. Most lenses, built for general purpose photography, can't focus that close. Surely, an iPhone can't do that, right?

Well it turns out that the Ultra Wide camera, in addition to capturing an expansive field of view, has a mere 2 cm focus distance. Starting with the iPhone 13 Pro—and only as a feature on the Pro configurations, and iPhone 16 and iPhone 17 models, even though the other non-Pro models include that camera—Macro mode enables you to take stunning macro photos (**Figure 50**).

Figure 50: None of my regular cameras can get this close.

Tip: If you own an iPhone that does not support Macro mode in the Camera app, you can try the app Halide, which has its own Macro mode for taking photos up close.

Capture Macro Photos

To take a macro photo, move the iPhone's cameras close to the subject you're photographing. The Camera app automatically switches to its Macro mode and keeps the item in focus (**Figure 51**). This happens almost invisibly; you may see the image shift as the phone switches cameras.

Figure 51: Even though the Main (1x) camera still shows as the selected zoom, the Macro mode has automatically switched to the Ultra Wide (.5x) camera.

This behavior is great when you're specifically taking macro photos, but is highly annoying if you're trying to take another type of photo. So, there's a way to manually turn off the Macro mode when it pops up: Go to Settings > Camera and turn on Macro Control.

Now, a Macro button appears in yellow when the Macro mode is engaged (**Figure 52**). To turn macro capture off, tap that button (which changes to an inactive Macro button).

Capture a Portrait

To understand the iPhone's Portrait mode, we must first talk about *aperture*. In most cameras, the aperture is the mechanical part of a lens that opens, letting in outside light to be recorded on the image sensor. Changing how wide or narrow the aperture opens determines how much light reaches the sensor.

iPhone cameras, due to their small sizes, simply do not include aperture mechanisms. Each camera has a single fixed aperture that passes light through the lens elements to the sensor.

So why bring up aperture in the context of making a portrait photo? Because one characteristic of much portrait photography is the background blur behind the subject (**Figure 55**).

Figure 55: The soft background here was created using a Fujifilm mirrorless camera fitted with a lens set to an aperture of f/2.2.

The aperture setting of a camera is a key ingredient to creating and controlling the amount of background blur, also known as the *depth of field*. And optically, the iPhone can't do it—iPhone lenses are designed

to capture as much of the scene in focus as possible, since there's no way to adjust the aperture.

And yet, we see portrait photos made with iPhones that do exhibit a shallow depth of field, where the subject is in focus and the background drops out of focus into soft blur (sometimes referred to as *bokeh*). To accomplish that, the iPhone performs a specific trick for which the entire Portrait mode was created: the blur is computationally added to the image; it's not real. Using a variety of techniques, the iPhone estimates the relative distances between objects and areas of the scene and creates a *depth map* that is saved with the image file.

Switching into Portrait mode turns this effect on, and you can set how much blur to apply before you capture the image (the blur is applied in real time). The best part: you can also adjust the amount after the fact.

Aperture Nomenclature

Even though the iPhone cameras have fixed apertures, Apple uses traditional photographic nomenclature to express it in both the Camera app and the Photos app. Aperture—as a value, not a mechanism—is represented in *f-stops*. The Main camera in the iPhone 17 Pro, for example, has a fixed aperture of f/1.78, which is considered a wide aperture that lets in a good amount of light.

For a traditional camera, you may buy a lens that has a maximum aperture of, say, f/1.8. That value indicates the most amount of light that can pass through it. An f/1.8 lens is considered "wide" or "bright" or "fast" because it lets in more light than a lens with a maximum aperture of f/3.5. Using the same lens, you'll likely photograph with an aperture setting of f/2.8 or f/5.6, which are smaller apertures that allow less light to hit the sensor, but feature a deeper depth of field—the background is less blurry. Photographers often purchase "fast" lenses at f/1.8 or f/1.4 because images shot at those wide apertures produce more background blur.

A lens can also have an aperture range. For example, I own a Fujifilm 18-135mm f/3.5–f/5.6 zoom lens, which means the widest aperture when zoomed out at 18mm is f/3.5, and when zoomed in at 135mm is f/5.6. Because the zoom mechanism moves the pieces of glass within the lens as you zoom in, it optically reduces the amount of light that gets through.

Capture a Panorama

Now here's a feature that has been fundamentally affected by smartphone cameras. A panorama is an image with a much wider aspect ratio than what the camera can capture in one shot. It's great for photographing broad landscape vistas, city skylines, and other very wide compositions. Although you can take a photo and crop it to a wide size, the result will be a low-resolution image.

With traditional cameras, the way to create a true panorama is to capture multiple photos side-by-side, where they each overlap such that they can be stitched together using software later to create the final photo (**Figure 65**).

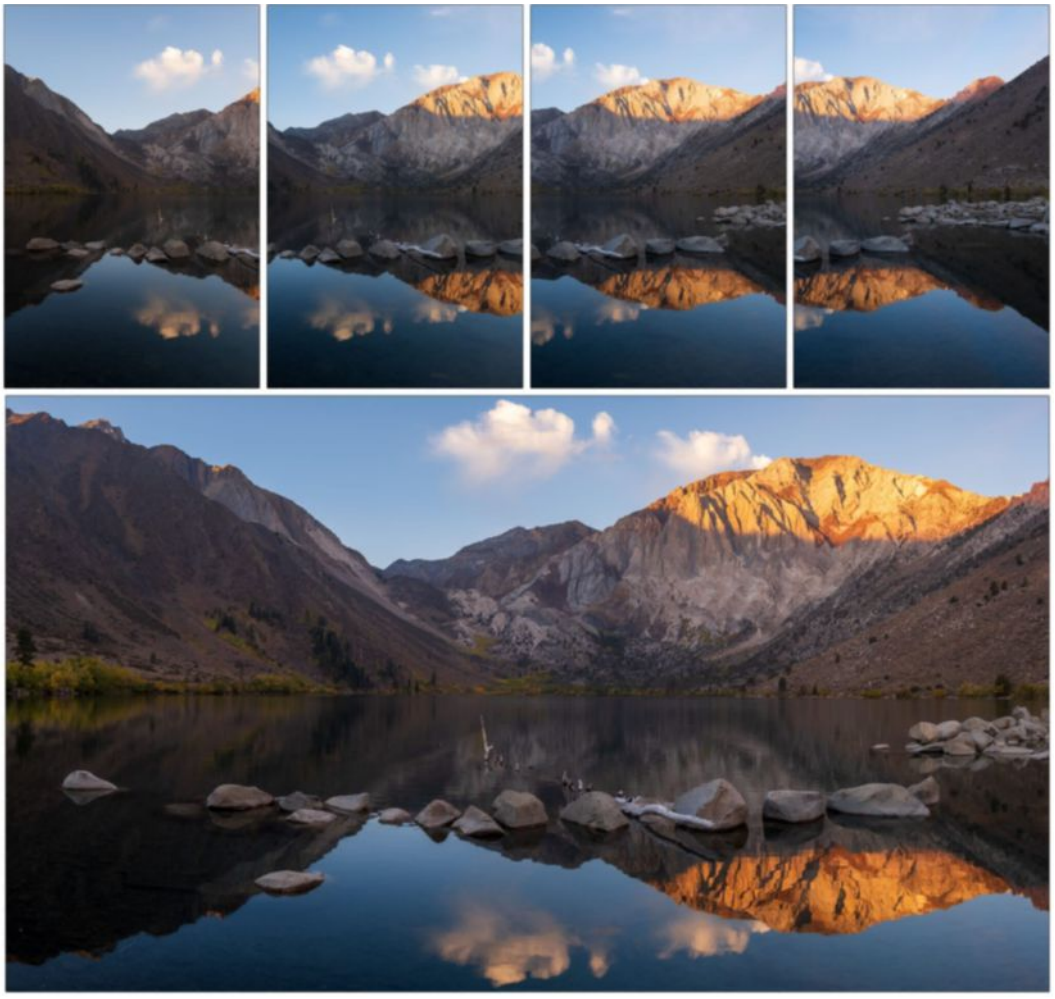

Figure 65: Panoramas are usually made by combining several overlapping images.

The iPhone takes a different, clever, friendlier approach by capturing frames and assembling them in real time. Would you get better results using the traditional method? Probably—and you can still take multiple overlapping photos and edit them together later. But the convenience of sliding your phone to "record" a panorama is hard to beat.

Create a Panorama

To capture a panorama on the iPhone, do the following:

1. In the Camera app, switch to the Pano mode.
2. Hold the iPhone in its vertical orientation and frame your composition starting at the left edge of what you want to photograph.
3. Press the shutter button to start recording.
4. Move the phone from left to right at a slow but steady pace, rotating your torso as needed. Keep the large white arrow aligned to the yellow line to get the best result (**Figure 66**).

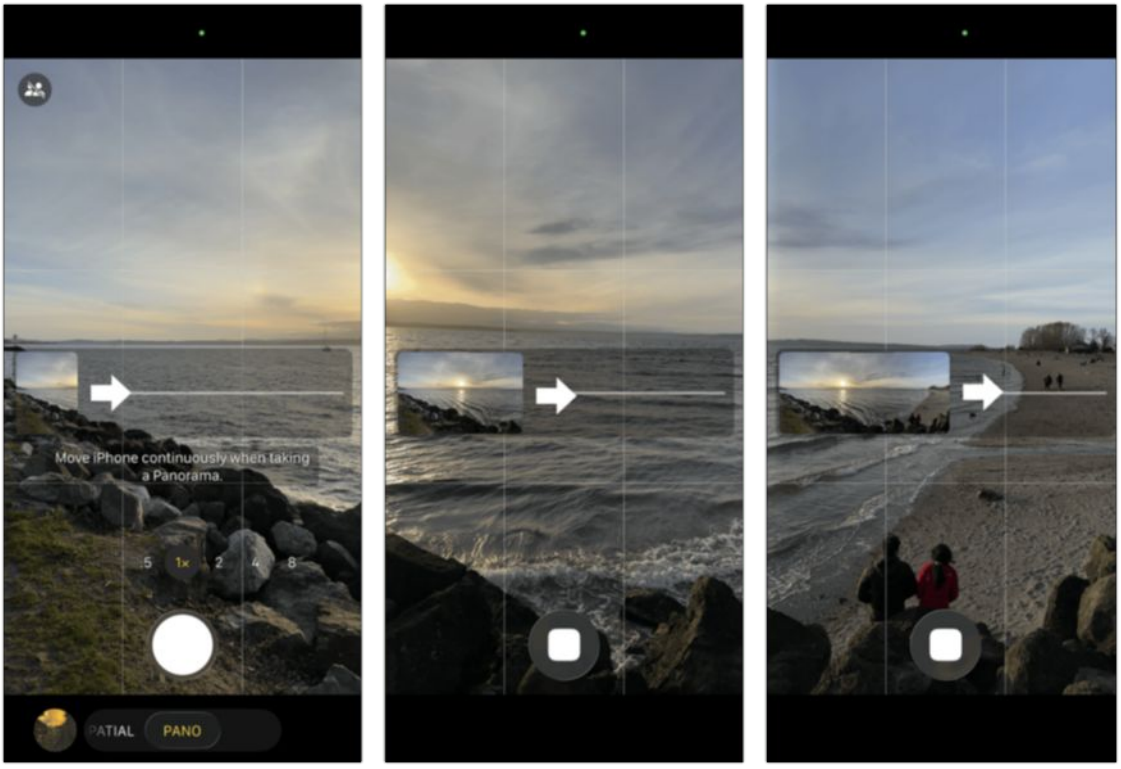

Figure 66: Record the panorama from left to right.

Capture in Live Photo Mode

Live mode is a gimmick, I'll readily admit. When you take a photo, the camera also records a few seconds of video and audio, so you end up with a little moving picture. It's not quite a movie—it's treated as a photo with a little something extra added.

What's more interesting to me is how a Live Photo is made. Remember that the Camera app is constantly evaluating the scene in front of you, applying corrections and sometimes effects in real time. It's always shuttling data between the camera's sensor and the dedicated image processors to make this all happen. So when you press that shutter button, the recording doesn't start there—the camera saves a couple of seconds of video and audio before the shot and a couple of seconds after.

And what does that produce? A little magical moment *surrounding* the photo that's also captured. That could be a funny expression that disappears for the photo, or just a sampling of the moment's sound and environment. Sometimes it's like finding archaeological treasure, with sound and motion capturing those past moments.

Before I get too enamored of *the mysteries of photography and life*, let me also say that Live Photos are often simple, pure fun. You can change how they play back, simulate long exposures, and choose a different frame that might be better than the image you caught with the shutter.

Take Live Photos

Ensuring you're capturing a Live Photo instead of a regular one requires a quick toggle and then you're ready to shoot:

1. Tap the Camera Control button or tap the Photo mode button to reveal the advanced controls. You can also swipe up from the area below the preview.
2. Tap the Live button so it does not have a diagonal line through it. Live Photo has three states: Live Off, Live Auto, and Live On. To ensure a Live Photo is recorded, set it to Live On (it becomes yellow).
3. Tap the shutter button to capture a Live Photo. A small LIVE badge appears while the video portion is being recorded (**Figure 69**).

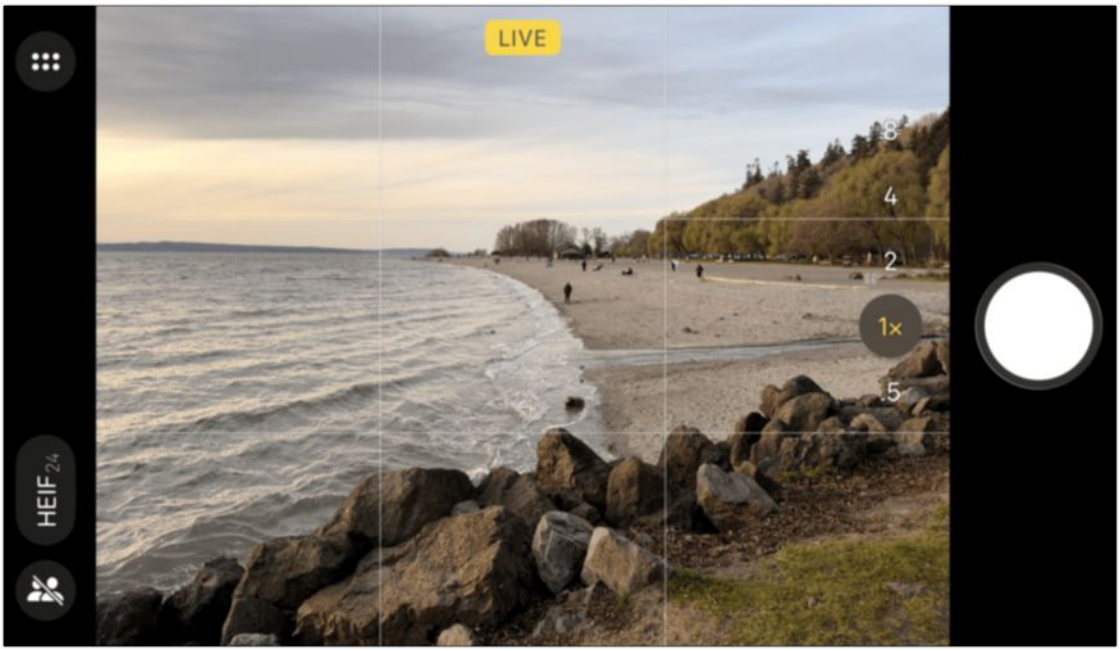

Figure 69: That LIVE badge indicates video is being recorded.

What's the difference between Live Auto and Live On? To be honest, I can't tell. In theory, in the auto mode, a Live Photo should be recorded when the phone detects motion in the scene. But even when my phone is completely still, nothing is moving, and the room is quiet, it will still record a Live Photo in auto mode. So I stick to just Live On or Live Off.

Use Filters and Photographic Styles

Up to this point, we've been taking photos that reflect what the camera sees. Colors generally match what's visible to our eyes, resulting in images that record the world as we view it.

But what if you want to make your photos more saturated or warmer? Or how about shooting in black and white? These adjustments can be applied later during editing, but it's better to see what you'll get when you're photographing.

Filters and Photographic Styles let you assign specific looks to your photos. Some are artistic, like black and white, while others are designed to offset some characteristics of the cameras. For instance, iPhone photos are often criticized for being oversaturated; with Photographic Styles, you can dial back the saturation and have it apply to all the photos you take.

However, these features are not the same across the entire line of iPhone models. The iPhone 16 and later (but not the iPhone 16e or iPhone 17e) include what Apple calls "Latest generation Photographic Styles" that operate much differently from the Photographic Styles in iPhone 13 and later models through iPhone 15 Pro (which I'll call "first-generation Photographic Styles").

If you own an iPhone 16 or later, skip ahead to Set and Apply Photographic Styles (Latest Generation).

Apply Filters

On all models except for iPhone 16, iPhone 16 Pro and later, Apple provides a scant nine filters, which apply visual effects to your photos such as Vivid Warm and Dramatic Cool. You can absolutely ignore filters while you're shooting and apply them later. I've never been

particularly interested in camera filters or presets, but there's one exception: being able to view and compose a scene in black and white. To apply a filter during shooting, do the following:

1. Tap the Camera Control button or tap the Photo mode button to reveal the advanced controls. You can also swipe up from the area below the preview.
2. Tap the Filters button.
3. Drag the slider to view how each filter applies to the scene in the preview area (**Figure 73**).

Figure 73: Apply a filter before shooting to preview how the photo will look, like the Noir effect here.

4. Tap the Dismiss Filters Control button to hide the options.
5. Tap the shutter button to take the photo.

When a filter is active, the Filters button appears at the top of the screen. Tap it to quickly jump to the options in the advanced controls.

Tip: To ensure that the filter you chose remains active the next time you open the Camera app, go to Settings > Camera > Preserve Settings and turn on Creative Controls.

Use a Third-Party Camera App

Throughout this book I've stuck with Apple's included Camera app because that's what most people use. Apple makes it easy to open it (see All the Ways to Open the Camera App) and it takes great photos in nearly all situations.

So why consider a third-party app? Control. Apple's Camera app is designed with 99 percent of people in mind, so it automatically handles aspects such as focus and exposure. You can Tap to Focus and Control the Exposure to some extent, but not at the precise level that some photographers would prefer. Third party apps offer features such as true manual shooting modes, the ability to capture raw files, and more.

Several camera apps are available, such as Obscura, Photon, and ProCamera. The app I reach for most is Halide, which is what I'm using as the example in this chapter.

Note: Another example is the mobile Lightroom app. It syncs with Creative Cloud so you can edit the photos in your Lightroom library anywhere, and also includes a full photo-capture component. If you're already invested in the Lightroom ecosystem, it's a good alternative.

Focus Manually

Tapping the preview area to set a focus point is handy, but not always exacting. Halide uses autofocus, too, but tapping the AF button in the controls reveals a slider that adjusts focus in small increments, much like turning a focus ring on a traditional lens. To check that focus point, turn on the Focus Loupe to reveal a circle zoomed in to the middle of the screen (**Figure 80**).

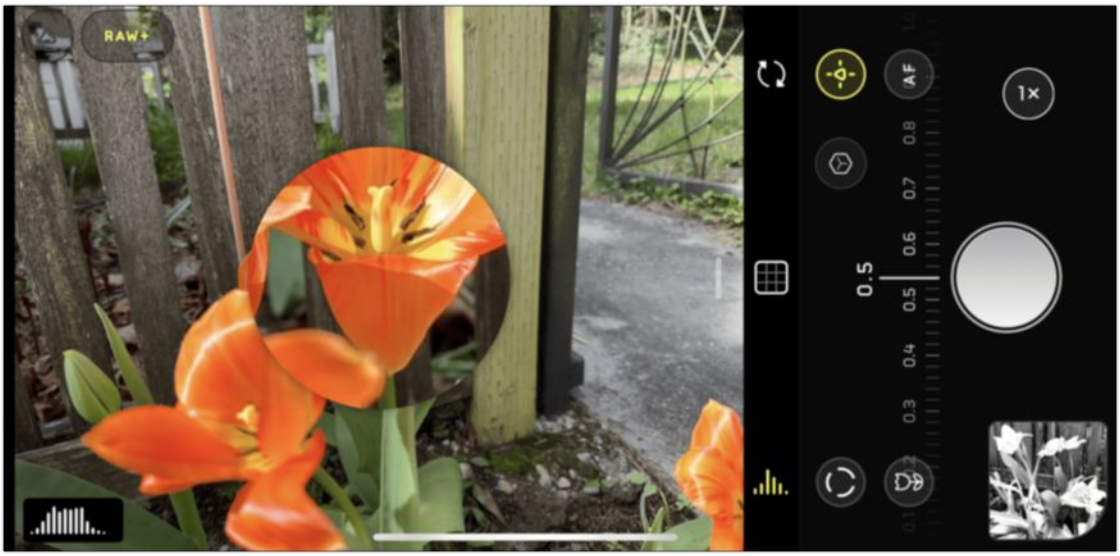

Figure 80: Manually focus with the help of a center spot in Halide.

Another option is to turn on Focus Peaking, which draws a brightly colored highlight over the areas that are in focus (**Figure 81**).

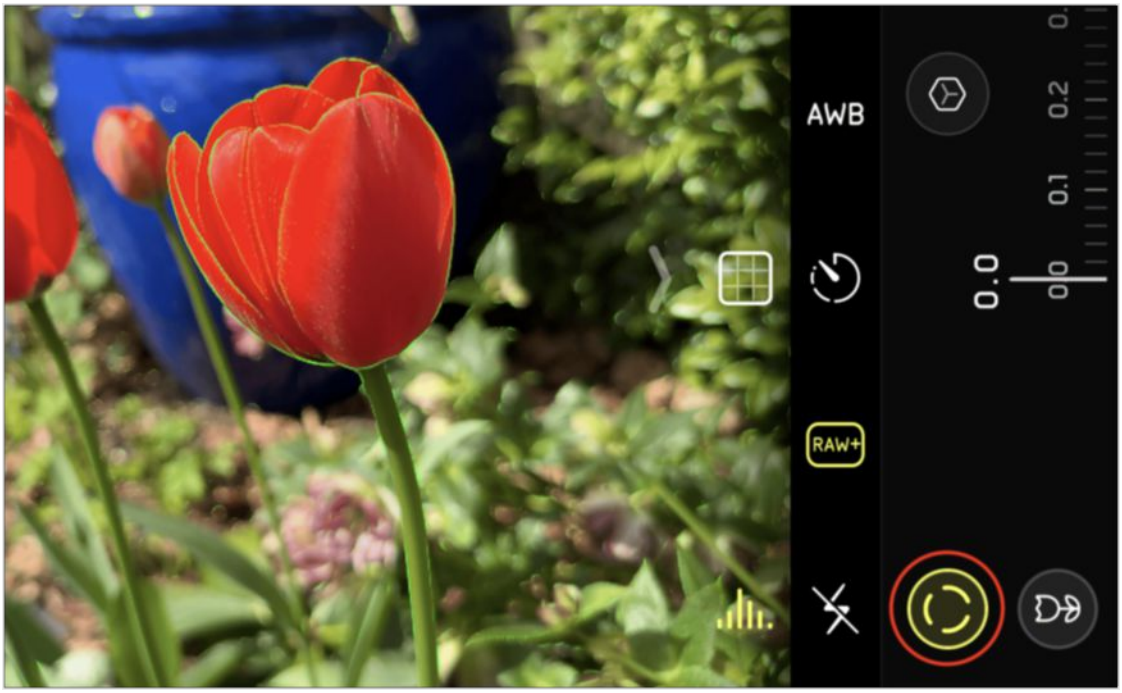

Figure 81: Focus Peaking in Halide draws green lines to indicate the areas in focus as you manually adjust the focus point.

Choose Shutter Speed and ISO

In Control the Exposure, I talked about the exposure triangle: the combination of aperture, shutter speed, and ISO to arrive at a photo's

Record Video

The concepts I've covered throughout the book—composition, exposure, zoom level—apply to capturing video just as they do when taking still photos. Video clips give us more of an experience of being somewhere, watching the world move around us with all of its surrounding audio. When you consider the immense resources Apple has put into the iPhone camera systems to make still photos, it's no surprise that the video features are also robust.

Understand Video Format Basics

Just as you need to take image size into consideration when you Choose a Resolution (for the latest models, at least), resolution also plays an important part when recording video. To that we add two other components: the *frame rate*, or how many individual frames are recorded per second, and the file format, which affects how much data is recorded for those frames. (Feel free to jump ahead to Record a Video if you have a handle on these concepts already.)

You can change these specifics in Settings > Camera, and also in the Camera app's interface when you're getting ready to record.

Video Resolution

Each iPhone I'm covering in this book—iPhone 12 and later, including the iPhone SE (3rd generation)—records video in three resolutions:

- **4K:** 3840 by 2160 pixels
- **1080p HD:** 1920 by 1080 pixels
- **720p HD:** 1280 by 720 pixels

You'd think 4K would be the obvious choice for all videos, and it's certainly more versatile. 4K video looks better on high-resolution screens and televisions, and you also have more latitude for zooming in

on the picture in editing later (such as if you want more emphasis on a person talking) (**Figure 86**).

Figure 86: Comparing 4K and HD resolutions.

However, depending on where the video will be viewed, such as social media outlets, shooting the two HD variants might give you plenty of resolution. They also produce smaller sized files compared to 4K.

Note: There's actually a fourth video resolution, 1920 by 1440 pixels, used by the QuickTake option. See Record a QuickTake Video.

Frame Rate

Video is a medium of time, so in addition to choosing resolution, you must also choose how many frames to capture per second. I've repeatedly emphasized the idea of shooting deliberately in this book, and frame rate is one of those decisions to make before you begin recording. When we watch video, our eyes blend the individual frames together to simulate movement; the number of frames per second (fps) affects the appearance.

Here are the available rates, with some ideas about how to use them:

- **24 fps:** This rate produces video that's closest to a "cinematic" or "film-like" feel, because this is the rate used by most motion picture

Store Photos in a Shared Library

If you've scrutinized most of my screenshots so far, you may be asking yourself, "What's that icon that looks like two people?"

That's the Shared Library button, which shows up when the iCloud Shared Library feature is enabled. With it, your photos can automatically appear in another person's Photos library (or their pictures in your library), instead of manually sending pictures to them. Up to five people with Apple Accounts can be part of a Shared Library.

For example, when my wife and I are on vacation or celebrating a holiday, we're both taking photos with our iPhones, and invariably she will have a shot that I missed and vice versa. With the Shared Library feature, I can specify which images to share and iCloud does all the rest.

Usually, this is all done through the Photos app when you're reviewing images, but you can also set up the Camera app so that all photos you capture get saved to the shared library. Or, you can turn it on when you want to share pictures and turn it off when you're done.

A Shared Library is different from a Shared Album in the Photos app. Shared photos appear within your main Photos library, marked with the Shared Library icon. However, think of it as a separate library alongside your regular library; the photos show up together in your main Library view, but structurally they're separate.

Note: I'm focusing on the camera side of shared libraries. For a more detailed look at what you can do with them, see Jason Snell's book *Take Control of Photos*.

Set up a Shared Library

First, make sure iCloud Photos is enabled: go to Settings > Apps > Photos and turn on the iCloud Photos option. Then, under Sharing on the same screen, tap Shared Library. If this is the first time you've used it, tap Get Started.

The setup process asks you to decide who will be part of the library and which existing photos to move to it. All of these are options you can change later, so in the interest of expediency, let's speed-run through the process:

1. On the first screen that asks you to choose participants, tap Add Later.
2. On the next screen, which defines existing photos to add to the Shared Library, tap Move Photos Later.
3. Apple asks one more time whether you'd like to add people to the library, but tap Invite Later.
4. Lastly, on the screen that sets which new photos to share, tap Share Manually Only. If you choose Share Automatically, every shot you take gets sent to the Shared Library; I prefer to pick and choose (so my wife doesn't also get 20 similar pictures of flowers in the rain or of the car noting which parking space number it's at).
5. Tap Done.

Note: This is an important caveat: you can have just one Shared Library, and at most five participants.

With the Shared Library set up, go to Settings > Apps > Photos > Shared Library and tap Add Participants. Type the name of the person or people you want to share it with, then tap the Done button. A new text message or email containing a Shared Library invitation is queued up for you to send. When they accept on their end, they become a participant in the library.

What About Camera Accessories?

The enormous popularity of iPhones (and all smartphones) as cameras has propelled a robust third party market of camera add-ons over the years. I've tried numerous accessories that give an iPhone a traditional shutter button, wide-angle lenses, filters, and the like.

And honestly, few of them ever stick around. Not because they're not good—like every category of accessory, though, quality varies widely—but because they're all *one more thing* you need to carry with you. We can talk about phone camera optics and sensors all day, but the truly revolutionary thing about the iPhone as a camera is that you don't need anything else. You can pull your phone out of your pocket or bag, capture a moment, and return it just as easily.

Now, from a photography standpoint, that can also be an advantage. When you want to go out and focus on making photos, a grip that makes the phone more bulky as a phone but convenient as a camera can be just the thing you need for the type of deliberate approach that I've advocated in this book.

With that in mind, here are a few categories of accessories that you'll run across, and why you might consider them.

Note: I'm not going to be comprehensive about companies and products here; part of the fun is investigating options yourself. So, although I do mention some products that I've tested, I'm not necessarily advocating one company over another (unless I specifically make a recommendation).

Lens Attachments

One of the earliest categories of add-ons was external lenses that provide fields of view that were beyond the iPhone's normal cameras. Think of fish-eye or telephoto lenses, for example. They attach in front of the iPhone's existing lenses to boost what the sensor sees.

In the professional video world, it's common to attach much larger lenses to an iPhone, something Apple does when shooting its commercials and live events. See Going Pro with iPhone Video Recording.

One of the leaders in this field is Moment, a company that started with these types of lenses.

The (Physical) Case for Add-Ons

I know this will sound silly, but one thing that often keeps me from using accessories like this is the need to attach things like lenses. Usually you need to put a case on your phone that includes mounting points for the add-ons. As someone who prefers not to add bulk to my iPhone, a case feels like yet another impediment.

That said, the cases are designed to hold their accessories securely. You don't want your $150 fish-eye lens to go bouncing onto the pavement while you're trying to take a dramatic photo. And if I were to spin this into a positive point, I'd say these cases can help put you into that photographic mode. Sort of like dressing up to go to a fancy event, having the utilitarian case on your iPhone means it's photography time.

Lens Filters

Camera filters—actual physical pieces of glass or plastic that cover the iPhone's cameras—can be helpful when you're shooting in bright conditions or when you want to add a particular analog look. They typically come in three types:

- Circular polarizers (CPLs) refract light at an angle, cutting down bright reflections (**Figure 105**). If you're photographing a stream

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