

*Tools
& Toys*



Welcome to the Tools & Toys *Better than iPhone* *Photography Guide*

Introduction

You remember that moment. I remember that moment.

That moment when you thought you had a perfect photograph in the making. Everyone was lined up, smiling, and ready for the perfect picture. You grabbed your iPhone, snapped a few photos, and moved on. You couldn't wait to see that photo on the computer.

Then, you imported all the photos from your day to your computer. You triaged through all the quick snapshots to find that perfect photo from earlier. And, once you found the photo, your first reaction was not what you were expecting.

“Oh...? I really thought that photo was going to turn out better than it did.”

This is how it works for most of us. The iPhone's camera is an incredible technical achievement and has improved dramatically over the last decade, but physics still get in the way. The iPhone's limitations can only be overcome by stepping into the world of dedicated cameras.

This is where we hope to step in with you.

The world of photography is daunting. Camera bodies, lens mounts, adapters, filters, sensor sizes, focal lengths, apertures... These terms bombard you the moment you hit enter on your Google search, and they aren't the most welcoming first impression.

Hopefully we can lay it out in a more friendly format and have you outside shooting photos faster than you can say “Cheese!”

Interchangeable Lens Cameras and Point-and-Shoot Cameras

After stepping outside the boundaries of the iPhone's camera, you'll be met with all sorts of camera bodies and lenses. In general, there are two broad categories of camera you'll come across:

- **Interchangeable Lens Cameras:** Just like the name says, these are cameras that have a mount on the front of the camera where you can swap out different lenses to give your images a different look or a different focal length. These are fairly traditional cameras that date back through the history of photographic equipment. Some of these camera bodies come with loads of buttons and dials for the professional photographer, while other camera bodies are scaled back and more user-friendly. Most interchangeable lens cameras can shoot video, but some models are more adept at shooting video than others.
- **Point-and-Shoot Cameras:** Point-and-shoot cameras are more of a modern phenomenon, whereby the camera and lens are permanently combined. Generally, you zoom in and out on a photo by using an electric switch on the camera and the lens digitally zooms in on your subject. Point-and-shoot cameras come with many automatic features to allow for simpler operation. Almost all point-and-shoot cameras shoot video — some even better than their interchangeable lens camera counterparts.



Although there are some phenomenal point-and-shoot cameras, like the [Sony Cyber-Shot RX100 V](#), we recommend skipping over point-and-shoot cameras in favor of interchangeable

lens cameras. Point-and-shoots have their place in photography — namely for quick snapshots or simple travel photography — but interchangeable lens cameras will always be able to achieve the same type of photograph without the inherent limitations of small point-and-shoots. Plus, interchangeable lens cameras allow you to experiment in a wide variety of ways by allowing you to change lenses and use more specific photographic settings.

If you're looking to only take better-than-iPhone photographs without learning more about photography or without diving into the world of photography kits and lenses, perhaps a point-and-shoot is for you. If this is the case, pick up a [Sony RX100 of any kind](#) that you can afford (the models range from a few hundred dollars into the \$1000+ range) and enjoy the first stepping stone into the world of better-than-iPhone photography.

If you want to learn more, let's move on.



Mirrorless Cameras and DSLR Cameras

Inside the world of interchangeable lens cameras, there are two broad categories of camera body:

- **DSLR Cameras:** When people think about cameras, they imagine DSLRs. Short for “digital single-lens reflex camera,” DSLRs use a mirror in the hump on top of the camera to reflect light through the lens and up into the photographer’s eye (known as an optical viewfinder). DSLRs are built with extra durability and less electronics than mirrorless cameras (see below), so they have longer battery life, but are considerably larger than mirrorless cameras. DSLRs have been around for a lot longer than mirrorless cameras as well, so there are many more lens and accessory options.
- **Mirrorless Cameras:** Mirrorless cameras are a newer style of camera body that sheds the mirror found in DSLRs and instead uses a tiny electronic screen (known as an electronic viewfinder) to show the scene to the photographer. Because mirrorless cameras don’t need to carry the large mirror, mirrorless cameras are generally smaller, lighter, and more portable. In most cases, mirrorless cameras trade size for lesser durability and shorter battery life. And although mirrorless cameras are a newer format of camera body, most mirrorless systems have new to very new lenses that take advantage of all the latest technologies.

There is an inherent stigma about purchasing mirrorless camera bodies. When you go to a wedding or a sporting event where professional photographers are on the scene, mirrorless cameras are very rarely the tool of choice. As a result, many people assume mirrorless camera bodies aren’t



capable of producing high-end photographs.

Of course, this couldn't be more incorrect. In fact, many of the limitations and drawbacks of DSLR camera bodies are corrected by mirrorless cameras (like size and weight, a true-to-photograph electronic viewfinder, and connectivity with the latest computers), so there is a general trend amongst all levels of photographers to slowly move toward mirrorless cameras. DSLRs aren't going away anytime soon, but the general consensus agrees that mirrorless cameras are the future.

A Quick Aside About the Exposure Triangle

If there is one important lesson to learn about better-than-iPhone photography, it's the exposure triangle. Shooting a photograph requires little more than firing the shutter, but there are three elements at work that give you the final product: aperture, shutter speed, and ISO. We're going to work hard to keep this as simple as possible, so let's start with an analogy.

Imagine you are sitting inside your home and are looking outside through the window. That window has a classic design with exterior shutters you can open and close.

- Aperture is the size of your window. If you have a huge window, you can let lots of light in all at once. If you have a smaller window, you can let in less light. Same thing for a lens. If you have a large aperture, you can let lots of light in at once. So, aperture is the size of your window.
- Shutter speed is how fast you can open and close the shutters. If you leave your shutters open throughout the day, you'll let in lots and lots of natural light. If you open and close them very quickly, you won't let much light inside. This is how shutter speed works in your camera. The faster your shutter speed (think 1/8000th of a second), the less light you let through the lens and onto the sensor.
- ISO is how sensitive your eyes are to the light coming through the window. If you are very sensitive to bright lights, you might need sunglasses inside if you leave the window open all day. This is how ISO works for a camera sensor. The higher the ISO, the more sensitive it is to light.

These three settings work together to form the exposure triangle. If you're using a high ISO (high sensitivity to light), a slow shutter speed (your window is open for a long amount of time), and a large aperture (a huge window), it's likely your photograph will be an over-exposed ball of white light. In reverse, if you open and close your shutter very quickly, have a low sensitivity to light, and have a tiny window, it's likely you won't get any light into the house. How you balance these settings is the fundamental key to understanding photography.

Another Quick Aside About Sensor Size

Within both DSLRs and mirrorless cameras, there are different formats and sensor sizes to choose from. In short, the sensor inside the camera body captures and reads the light that flows through the mounted lens. The size, shape, and technical specifications of that sensor play a large role in the type and quality of the photograph you can shoot.

When you do your buying research, you will come across different sensor sizes, all of which have their own strengths and weaknesses. These are the four sensor sizes that are most common today.

- **Micro Four Thirds (Micro 4/3):** One of the smaller sensor sizes in interchangeable lens cameras. You'll find this sensor size in Olympus and Panasonic branded cameras.
- **APS-C:** This sensor size fits in between Micro Four Thirds and full-frame sensors. Many camera manufacturers produce APS-C cameras, like Sony, Fujifilm, Leica, Canon, and Nikon. Nikon refers to APS-C sensor size as "DX," so if you find a camera with "DX-format" in the name (like the Nikon D5500 DX-format camera), you can be sure it has an APS-C-sized sensor inside.
- **Full-Frame:** Full-frame sensors get their name from older film cameras. One of the most common film sizes was 35mm film, and modern full-frame sensors mimic the size of 35mm film. This is one of the larger sensors you'll find in a camera, which often comes with a larger price tag as well. Canon and Nikon create some of the worlds best

full-frame DSLR cameras, while Sony is the only major manufacturer today producing full-frame mirrorless cameras.

- **Medium Format:** Medium format sensors are any sensors that are larger than full-frame sensors. Like full-frame, medium format gets its name from old film formats. Any sensor larger than full-frame is prohibitively expensive for most non-professionals, but also packs some of the best image quality money can buy. Currently, modern medium format camera manufacturers like Hasselblad and Phase One sell their DSLR-style cameras for well north of \$20,000. Recently however, Hasselblad and Fujifilm announced medium format mirrorless cameras for less than \$10,000. This will be the last you hear of medium format in this guide, as the format is out of the scope for most people.

To reiterate, each sensor size has its own strengths and weaknesses. We believe sensor size should not be the deciding factor when purchasing your first better-than-iPhone camera. There are too many other important factors aside from sensor size that can make or break your photographic experience.

Prime Lenses and Zoom Lenses

We've spoken a lot about camera bodies so far, but we've only touched on the most important piece of equipment for creating a beautiful photograph: the lens.



Lenses come in all shapes and sizes. Generally, lenses are defined by their field of view (the higher the millimeter measurement, the more “zoomed in” the lens) and by their aperture (the “f/xx” measurement that tells you the amount of light the lens can let in). Generally, the higher the field of view and the lower the aperture (lower apertures allow more light in), the more expensive the lens.

Here are a few general ideas of lenses and their focal lengths:

- **Wide angle lenses:** For shooting landscapes or architecture.
- **Street/standard lenses:** For casual photographs that look like what you see with your own eyes.
- **Short telephoto lenses:** For portraiture and some sports photography.

- **Telephoto lenses:** For sports and wildlife photography.

Within each of these focal ranges, you'll find two types of lens: prime lenses and zoom lenses.

- **Zoom lenses:** As their name suggests, zoom lenses allow the photographer to change focal lengths within the lens' focal range. Standard zooms encompass fields of view ranging from moderate wide angle to moderate telephoto, while wedding photographers often use telephoto zooms to stand far back from the action and still get wonderful portraits. Generally speaking, zoom lenses trade focal length flexibility for image quality. Zooms are *generally* less sharp, allow less light in, are generally larger, and often suffer from some forms of distortion. In exchange, you can change focal lengths quickly. Overall, modern zoom lenses still offer superb image quality and there are much fewer tradeoffs than with older zoom lenses.
- **Prime lenses:** Prime lenses are lenses that *don't* change focal length. A 50mm prime lens will only shoot at the 50mm field of view — any "zooming" will have to be done with your feet. Prime lenses go in the other direction of the tradeoffs found in zoom lenses, however, because manufacturers don't have to account for a range of fields of view, they can maximize image quality at one specific field of view. Generally, prime lenses are smaller, allow more light in, are sharper, and are generally less expensive (although the most expensive prime lenses still cost a lot of money).

Why shoot with a prime lens? Prime lenses come with bigger apertures — they allow more light through to the sensor. The larger the aperture, the easier it is to blur out the background (an effect known as "bokeh") for nice portraits and still life photography.

Also, prime lenses help photographers learn about composition. When you can't zoom with your lens, you must either move yourself around to create a beautiful image, or you have to learn to work with what you have in front of you. Prime lenses are great teachers for the art of photography.

This should give any beginner an idea of what the terms and typical lingo are when researching their first better-than-iPhone camera. Hopefully, if someone says, "I shoot with a Fujifilm APS-C camera and a standard zoom," you'll know exactly what that means.

Our Overall Camera and Lens Recommendation for Better-Than-iPhone Photography

So, why go through all this camera and lens jargon? Because we have a recommendation for all people looking to improve their photos beyond the capabilities of the iPhone.

After all is said and done, we recommend purchasing the [Olympus OM-D E-M10 mirrorless camera](#) and the [Panasonic Lumix 20mm pancake lens](#). This camera and lens combination checks many of the boxes on most beginning photographer lists.

- The Olympus OM-D E-M10 is a small, light, and extremely portable camera. Coupled with the Panasonic 20mm pancake lens, you can slip the entire combination into your jacket pocket.
- The Panasonic 20mm pancake lens has a large aperture and can create smooth backgrounds when



shooting portraits.

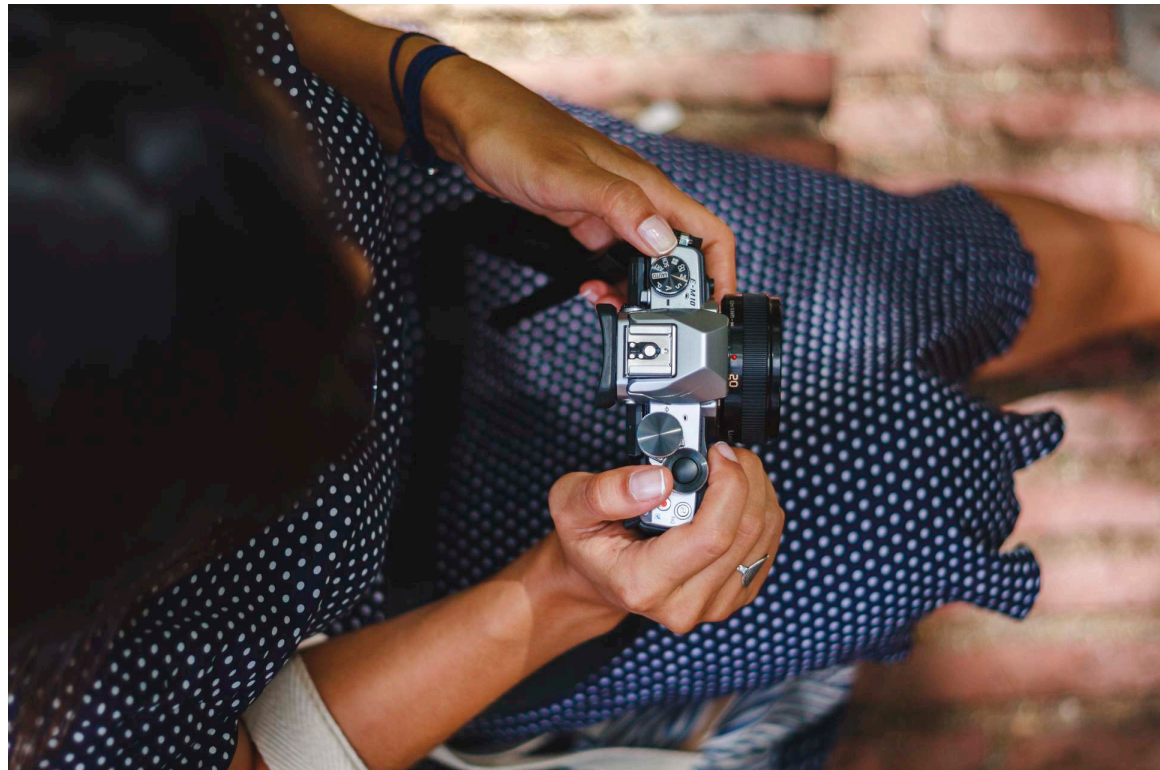
- The Panasonic 20mm pancake lens is a prime lens — perfect for teaching new photographers the basics of composition and zooming with your feet.
- The Olympus OM-D E-M10 camera is very inexpensive, as is the Panasonic 20mm pancake lens.

That last bullet point is very important. You can find the Olympus OM-D E-M10 camera used these days for little more than \$300 USD, while the Panasonic 20mm pancake lens can be purchased brand new for \$300 USD or less if used. For a mere \$600, you can shoot professional level images worthy of being put on the wall or worthy of being sold to customers.

If you are unable to find the original OM-D E-M10, Olympus has made a second generation camera of the E-M10 (referred to as the OM-D E-M10 Mark II) that costs a little more money and fixes some of the small issues of the original E-M10. Overall though, we recommend saving the cash on the Mark II and purchasing either a second lens or an off-camera flash to compliment your kit.

Wrap-up

All in all, we hope this guide gives anybody looking to improve their photography the best first foot forward into the photography world. The terms and lingo can often become overwhelming, especially when you get into flash photography and the technical specifications surrounding the camera's sensor. Generally though, for those looking to jump into photography, this guide should give you the basics needed to make your first camera and lens purchase.



Once you've made that purchase, turn off the computer, turn off any guides, silence any doubt, and go outside and shoot photos. Like anything in life, photography is best learned by *doing*, not *reading*. Experiment. Give things a try. Don't let someone's criticism inhibit you from trying again. Photography is an endless hobby with an endless search for the perfect photograph.

In all likelihood, you'll never shoot the perfect photograph.

But there's no harm in trying.