The dPS Ultimate Guide to Photography for Beginners
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WHERE TO START?
Photography can be a fun and rewarding thing to learn, but where do you start? How should you set up your camera, what skills should you work on first, how should you be processing your photographs?

This in-depth guide aims to answer those questions and help you create a foundation for success as you pick up this exciting new hobby of photography.
SETTING UP YOUR FIRST CAMERA
When you unpack your first camera you may be intimidated with the various menus, settings, and options for customization. The camera user manual, while it does contain valuable information, is often dry and technical which only compounds the issues of learning this new technology.

While you could embrace the good old “play with it” method of learning it can lead to frustration if your early results don’t live up to expectations. This method can also lead to learning less than optimal ways of using your camera making it more difficult to fix bad habits later on.

Each camera manufacturer has its own design, terminology, and specifications. So, it’s difficult to provide you with an exact guide for setting up your specific camera. As a result, for detailed instructions about your camera, I suggest searching YouTube or specific guides found on the internet. Just Google the brand and model of your camera to find more specific help.

Regardless of manufacturer, there are a few important steps you should take to make sure your camera is set up to your liking. Let’s go through those individually.

**Image Quality**

Determining what image quality to capture your photographs in can be a confusing task when you’re first starting out. What is JPEG, NEF (RAW), JPEG+RAW?
The simplest route to take is to save your photographs in the highest quality JPEG option your camera offers. This will allow you to focus on learning how to take photographs while allowing the camera to handle the bulk of the image processing. You’ll still have the ability to add some minor touchups if you want to later, but you won’t have to process your images on your computer.

As you progress and become more comfortable with your camera and the techniques you’ll learn in the rest of this article, you may want to switch this setting to capture your images in a RAW format.

The advantage of RAW format is that your images are left unprocessed by the camera, allowing you to choose the processing that reflects the image you saw when you captured it, not the preset processing that your camera performs when saving a JPEG (sharpening, contrast and saturation levels).

Due to this unprocessed nature of a RAW file, it turns out to be a much larger file. Depending on the size of your camera’s sensor this could be more than 10 times larger than your JPEG images. This means you’ll notice that the number of images you can capture on your SD card will drop substantially, so you may need to purchase additional or larger memory cards.

**File Naming**

Determining a file naming system for images is something that most people gloss over, but choosing this early on will help you start an organizational system that works for you.

This setting is primarily going to rest on your personal taste. You could save the image file with the date the image was captured. Or you could save images with a sequential numbering system. There’s no wrong way to set this up, it depends on whether you prefer to keep track of the dates of your shoots or the number of photographs you’ve taken.
Time and Date

Even if you don’t save your images by date, you’ll still want to set the time and date of your camera. This information will be recorded in the metadata (hidden in the properties of the file) of each image, which will allow you to search and find images based on date even if you don’t name them as such.

However, if the date and time are set incorrectly, it could become very difficult to match up your events with the dates your camera thinks they were taken (although you can correct this in most photo editing software).
Metadata

With each photograph, you take your camera records a lot of information about that exposure. This information is known as the metadata of the image. When you are setting your camera up, you can customize this to some extent. For example, you can embed your copyright information right into the metadata of every image you take.

Reading the metadata later can be a little confusing, but it can also tell you a great deal about the photographs you’ve taken. If you ever want to go back and try to reproduce it later or troubleshoot ones that went wrong, this data can be very useful.

Inside a program like Lightroom, the metadata is displayed and you can even add to it if you so choose. Lightroom will even let you search your library based on this information so if you want to see all photographs taken at 18mm, or shot using f/2.8, you can do that!
If you’re not using any software to process your photography, you can still view your metadata. The process is similar on both Windows and Mac. Find your image file and right click on it. On Mac you’ll want to navigate to “Get Info” and inside the window that pops up will be all the data attached to this image. Windows works in the same manner, but they call it “Properties” instead, and you navigate to the “Details Tab”.

As mentioned earlier, for more information on getting your specific camera set up, YouTube is a great place to start. You’ll be able to find walkthroughs of all the various menus, what they mean, and how to customize them.

Now that your camera is set up, it’s time to understand a bit about how it actually works. When you take a photograph, what exactly is happening inside the camera that allows the scene to be saved to your SD card?
For more on setting up your new camera read:

- Top 10 Things to do When Your New Camera Arrives
- Getting to Know Your New Camera
UNDERSTANDING HOW YOUR CAMERA WORKS
A camera is a simple device which is really only comprised of a few key parts. For standard DSLRs, there is the camera body with a lens attached. Your camera body contains everything needed to capture and process an image, while the lens is what focuses your image onto the sensor inside the camera.

The way these two components (the camera and the lens) work together is as follows.

Light comes through the opening in your lens. When you are not shooting there is a mirror inside that reflects that light up through a prism (think periscope) and through the eyepiece, so you can view the image as seen exactly by the lens.
When you press the shutter button to take a picture, the mirror flips up out of the way, and the lens adjusts to the chosen aperture (opening in the lens, more on that later). The shutter in the back of the camera then opens, allowing light to hit the sensor, creating your image.

The camera saves the image to your memory card, the mirror returns to its original place and it’s all reset ready for you to shoot again. This all happens in less than the blink of an eye.

If you have a Mirrorless camera they work a little differently. They do not have a moving mirror system.
Instead, what you see in the viewfinder is a live feed of exactly what the image sensor is processing. This allows you to see things like Depth Of Field, the exposure, White Balance and more, before you even take the photograph. When you press the button of a Mirrorless camera, the lens adjusts to the chosen aperture, the shutter opens, and the image file is saved to your card.
TECHNICAL SKILLS
Your First Skills as a Photographer

Now that you have a basic understanding of how your camera captures a photograph, it’s time to start developing your skills as a photographer. There are three major concepts that you’ll need to develop; technical skills, artistic skills, and personality.

Technical Skills

The technical skills of a photographer revolve around what settings you choose to take the photo. That includes: just knowing how to use the camera and change settings, getting a good exposure, focusing a sharp image, getting the right color, etc. These are the things you need to learn to understand how to make your photographs sharp and properly exposed.

The Exposure Triangle

As you may guess by the name, the exposure triangle is made up of three components. These three components are; the aperture, the shutter speed, and the ISO. Learning to control these three settings is vital to achieving a properly exposed photograph.
Aperture

The aperture is simply the opening in your lens. Just like the pupil of your eye, it opens and closes to adjust the amount of light coming through the lens, and hitting the sensor. If your scene is dark, you can open it to let more light through the lens. When your scene is bright, you might make the aperture smaller to let less light pass through to the sensor.

The aperture inside the lens opens and closes to control the amount of light entering through the lens.

The aperture not only allows you to control the amount of light passing through the lens, but it also affects the depth of field (amount of your image that is in sharp focus). You will learn more about this later just keep it in the back of your mind for now.
Shot at f/16. A small opening that provides lots of depth of field (in focus area of the image).

Shot at f/10.

Shot at f/5.6.

Shot at f/2.8.

Shot at f/1.8, a very large aperture which has a shallow depth of field. You can see how little of this image is sharp.
Shutter Speed

The amount of time that the shutter is opened allowing the imaging sensor is exposed to light is called your shutter speed.

Typically the shutter speed is measured in fractions of a second, for example, 1/200th or 1/8th of a second. However, there are cases where you may even allow your shutter speed to be open for seconds at a time. Extremely low light photography, shooting light trails, or capturing photographs of the stars are examples of where this might be the case. Make note that most cameras display two seconds like this - 2”.

A shutter speed of 1/4000th of a second is needed to freeze fast moving subjects like this moth.
Shutter speed one third of a second.

Shutter speed 1/13th of a second.

Shutter speed 1/50th of a second.
ISO

The final leg of the triangle is often the most confusing to new photographers primarily because it’s not as easy to visualize as the other two. With aperture, you can picture the opening in the lens and with shutter speed, you can picture it moving faster or slower. ISO on the other hand - is a measure of sensitivity to light.

When you increase the ISO on your camera what essentially happens is that you are telling the image sensor to be more sensitive to light. This means that for the same size opening (aperture), and the same amount of exposure time (shutter speed), you capture more light, and thus achieve a brighter image.

The trade-off is that with a higher sensitivity you also get a great chance of generating more noise (unwanted grain or speckles) in your images. Camera manufacturers have come a long way in improving this, though, and many new cameras are capable of shooting at very high ISOs with minimal noise.
Technical Skills

Shot with a low ISO.

Shot with a high ISO.
Shot with ISO 100.

ISO 100 at 100% crop.
Shot with ISO 5000.

ISO 5000 at 100% crop.

Notice the presence of heavy noise (grain) in this image compared to the one at ISO 100.
For more information on the technical skills you need to learn, check out the following articles:

- Mastering the Exposure Triangle for Newbies
- Understand Exposure in Under 10 Minutes
- The Exposure Triangle Visualised: Cheat Sheet
- How to Read and Use Histograms
- How to Understand the Mysteries of ISO for Beginners
- 6 Tips for Using ISO Effectively With Your Camera
- Seeing in Depth of Field: A Simple Understanding of Aperture
- Getting off Auto; Manual, Aperture and Shutter Priority modes explained
- Demystifying Shutter Speed
- An Exercise to Learn and Practice Shutter Speed at Home
- 6 Ways to Use Shutter Speed Creatively

You may also want to have a look at our dPS beginner course Photo Nuts and Bolts - Know your camera, take incredible photos.
Putting it Together

It’s easy to talk about each of these elements individually, but when you’re in the field taking a photograph, it’s not good enough to only know about one of them. The key is to learn how each one affects the other two, and how they work together to allow you to capture the images you want. There are also a few other key settings you’ll want to know. Let’s look at them.

White Balance

The white balance of your photograph relates to both the color temperature and the tint of your image. The color temperature will affect the yellow to the blue (warm to cold) color of your images, while tint will affect the green to magenta of your images. Your camera has different white balance settings for you to choose from including an auto option as well as several presets.

All light sources and types of light have a color. Think about fluorescent light bulbs; you can get them in cool white, natural, or warm light – each having a slightly different hue. Other light sources are the same. For example, daylight and flash are fairly neutral, tungsten or incandescent bulbs are quite orange, shade is bluer, fluorescent is often a bit green. What the white balance setting in your camera attempts to do is to neutralize any tint from the light source so that your subject is rendered accurately.

So if you are shooting under tungsten lighting (incandescent or regular light bulbs) which is very orange – when you select the Tungsten White Balance preset the camera adds a blue filter which is the opposite color, to neutralize the orange tint. You can also use White balance creatively to add color such as in the case of shooting a sunset if you want it more orange choose the Shade preset on your camera.
The good thing about white balance is that it is consistent and predictable, so as a new photographer Auto White Balance is a good place to start. If you choose to shoot RAW format you’ll actually have a lot of control over the white balance of your images in post-production allowing you to make corrections should you need to later on. If you shoot JPG you need to make sure you get the white balance right in-camera.
Learn more about White Balance here:

- Demystifying White Balance
- How Auto White Balance Can Hinder Your Photography
- Setting The Mood By Adjusting Your White Balance
- Guide to Creative White Balance for Landscape Photography

Learning How to Focus

In addition to learning how to properly expose your photographs, you’ll need to learn how to achieve the proper focus. Achieving sharp focus may be even more important than the perfect exposure simply because software is still unable to truly correct for soft focus.

Focus Modes

Your camera allows you to tailor the type of focusing it will do, to the subjects you want to photograph. Each manufacturer picks their own way to describe these modes, but they work in the same manner on all cameras.

- Single Focus Mode: AF-S (Nikon) / One Shot (Canon) - When you specify this mode the camera assumes that your subject is not moving. When you press the shutter button half way down the camera will snap into focus and lock onto the subject. You can then recompose your image while holding the shutter button part way down to maintain this focus. Once you depress the shutter button fully your image will be captured.
- Continuous Focus Mode: AF-C (Nikon) / AI Servo (Canon) - This is a continuous shooting mode which automatically tracks your initial focus point as the subject or camera moves. Use this mode for photographing active children, pets, sport, or other action related subjects.
- Auto Mode: AF-A (Nikon) AI-Focus (Canon) - This option tries to guess which of the above two options is right for the situation you are currently photographing. While this may seem easier and more intuitive to use, it can also be frustrating as your camera starts doing one thing. It also has the chance of getting it wrong.
Focus Points

Your camera is also capable of focusing on a single point within your viewfinder’s frame or by using multiple points within that frame. In most cases you when your subjects are slow moving or stationary you’ll want to use single point focus mode. You’ll switch to a multiple focus point mode when you’re photographing action such as birds in flight or sports.

Learn more about focusing your camera here:

• Getting Sharper Images: an Understanding of Focus Modes
• 5 Beginner Tips for More Autofocus Success
• How to Avoid Blurry Photos by Choosing the Right Autofocus Mode
• 9 Mistakes That Can Cause Blurry Photos
• Understanding Normal and Cross-Type Focusing Points
• 4 Tips for Using for Live View to Get Sharper and More Creative Images
The Shutter Speed Rule

It’s simply a matter of physics, you can only hold a camera still for so long without the motion of your hands (camera shake) being detectable in the image you’ve captured. When this happens your image will look blurry. Nine times out of ten with newbie photographers a blurry image is caused by a slow shutter speed, not improper focus. The good news is that there’s a very easy formula to remember which will allow you to rarely worry about this dreaded issue.

Take the focal length of your lens and that becomes the shutter speed you cannot go below. For example, if you’re photographing at 50mm, your minimum shutter speed is 1/50th of a second. If you’re photographing at 200mm your minimum shutter speed is 1/200th of a second or faster.

A couple of notes about this rule: These numbers are for 35mm equivalent focal lengths so if you are using a crop sensor camera (one which is not full frame) multiply by that first, and then apply the shutter speed rule (Nikon’s is 1.5x so if you’re shooting with a 200mm lens on a Nikon crop factor camera body go with 200 x 1.5 = 300 or 1/300th as your minimum shutter speed.)

Also, this rule tends to break down at the extreme end. For example, 1/20th may be too slow of a shutter speed even if you’re photographing at 20mm. The same goes for 1/500th with a 500mm lens because the weight and sensitivity to movement are so magnified at this end that you’ll probably need to shoot even faster - or use a tripod.

Many modern lenses have a setting called VR or IS. This stands for Vibration Reduction or Image Stabilization and they essentially do the same thing, try to minimize camera shake at slow shutter speeds when hand holding. High quality systems may let you get away with even slower shutter speeds.
All this said, because everyone’s different, the best thing to do is to try to find your own personal shutter speed limits by taking test shots. If your photographs are soft or blurry, odds are good that it’s not the lens’s fault, but rather, that you’re not able to hold the lens still enough to capture a sharp image.

**Proper Tripod Use**

![Image of tripod and camera](image)

**Investing in a sturdy tripod is important**, but that’s only half the battle. You also need to learn how to use the tripod effectively in order to ensure you get sharp photographs.

There are situations when you’ll absolutely need a tripod. For example, if you want to create silky waterfall photographs, shoot photographs of the stars, or do any sort of light painting a tripod will be your new best friend.

Some common errors many new photographers make are; extending the legs from the thin segments first. The thicker upper segments will provide more support so use those first, then use the thinner segments if you need more height. Only as a last resort should you extend the center column as it is the least stable piece of your tripod and any instability can result in camera shake, or worse, a damaged camera.
Another common mistake made with tripods is not balancing the center of gravity. A good quality tripod will allow you to adjust each leg’s angle independent of the others. By doing this you can negotiate difficult terrain. It might look awkward to have one leg at 45 degrees and the other two at 20 and 30 degrees, but if that’s what it takes to get the camera’s center of gravity straight down the middle then make sure that’s what you’re doing.

**Use a High ISO When Necessary**

There is a lot of fear among some photographer in using higher ISO settings. This may be the result of a hold-over from the days when digital cameras first made their appearance and high ISO settings were truly terrible. But today’s cameras are substantially more improved, meaning that you can get very usable images well above ISO 1000 on even most entry-level DSLRs.

This means that if you are in a low light situation or if you are trying to freeze fast motion and need a faster shutter speed, don’t be afraid to bump the ISO. Even if you do get a little bit
of noise in the photograph, post-production software has gotten very good at removing and smoothing out noise that it probably will be recoverable in the end.

The moral of the story is that sharp photographs don’t require expensive lenses, but rather a solid understanding of the fundamentals of what causes blur in the first place. Know your camera’s focus settings and options, use the minimum shutter speed when hand holding and use a tripod properly when needed.

11mm lens, ISO 1250, f/2.8, 30 seconds.

More on using a high ISO here:

- [How I Learned to Stop Worrying and Love Auto ISO](#)
- [Reasons to Shoot High ISO Images](#)
- [Use a High ISO to Create Grainy Shots](#)
- [Three Uses for High ISO you Might Not Know](#)
ARTISTIC SKILLS
While technical skills will allow your images to be sharp and well exposed, they won’t help you to capture interesting photographs. This is where your artistic skills will come into play. Things like composition, subject matter, and creating drama with light all play a role in determining the interest level of the photographs you capture.

Composition

There are a number of techniques you can use for composing your photographs and it is important that every new photographer learns at least a solid foundation in composition theory.

The composition of your photograph is arguably more important than the subject itself. After all, interesting subjects can be made to appear boring, while boring subjects, can be made to look quite interesting, all due to the way the photographer has chosen to compose the photograph.

The first rule of composition you will want to learn is the rule of thirds. This rule is one that is talked about over and over again. It’s such a fundamental part of photography that your camera manufacturer has more than likely provided a grid (that looks like a tic-tac-toe board) in your viewfinder to enable you to quickly compose images using this rule.

The basic concept of the rule of thirds is to place your subject, or your primary area of focus, (basically where you want your viewer to look) on one of the four cross sections of the grid in your viewfinder.
A Couple of Key Things to Note

Leave room in front of your subject, not behind. In most cases, you will want to leave room in front of (i.e. where your subject is looking or leaning) rather than behind it.

Use one-third of your image for providing structure or grounding your viewer to the scene that you are presenting, and two-thirds to showcase the reason for photographing the scene.

There are many more advanced composition techniques but get really comfortable with this rule before you venture out to more complex techniques. Plus, there are a number of composition tools that you can use within just this one technique. You will learn about those next.

Composition tools are what you use within your frame to drive your overall composition. These tools can be elements within your scene, or it can be the absence of these elements that drives the composition. It’s all about how you use them to your advantage when you compose a scene.
Leading Lines

Leading lines is a tool that you can use to pull your viewer into and through your photograph. On the most basic level, a leading line is simply a line within your photograph that leads the viewer to something interesting. The last word in that sentence is what's important.

**Important note:** You cannot just photograph leading lines - they are just a compositional tool, not the subject of the photograph.

To compose with leading lines you’ll first want to find a good subject, anything that interests you. Next time you raise your camera to photograph first stop and ask yourself, “Is there something within this scene that I can use to lead my viewer towards this subject?” Remember, the person viewing the photograph doesn’t have all the context that you had while you were on this scene. Therefore, any additional help you can provide to the viewer about what it was that caught your eye and made you take the photograph will help make the image more interesting.
Curves

Curves are similar to leading lines in a way but rather than straight, they are rounded. The great thing about curved lines is that they can meander through a photograph allowing you to hit upon multiple interesting elements across the entire frame.

Curved lines work really well in landscape photographs as a result. This allows you to capture both interesting foreground elements and distant background elements while tying it all together.
Symmetry

When you have a symmetrical subject, odds are good that you’ll want to use this tool in your photograph. Reflections are a great way to fill your scene with interesting elements. You can have a sunset reflected in a river, which leads toward the sunset itself for example.

For more on composition read:

- [Five Ways to Improve Your Composition Skills](#)
- [Tips for Using Natural Framing to Improve Your Composition](#)
- [How to Improve Composition by Placing your Subject Off-Center](#)
- [10 Ideas to Instantly Improve Your Photography Composition](#)
- [6 Advanced Composition Techniques to Improve Your Photos](#)
- [4 Steps to Creating Images With More Meaningful Composition](#)
- [How to Create Strong Compositions Using Color Contrast](#)
- [How to Use Leading Lines Effectively in Landscape Photography](#)
YOUR FIRST TIME PROCESSING PHOTOGRAPHS
Your post-production skills are what can take a great photograph to the next level, but processing does not create great photographs.

A great photograph is created the moment the shutter is released, not on a computer, hours or days later. Therefore it is important for you to have at least a fundamental understanding of post-production as you begin taking your first photographs.

Software Choices

There are a number of free image processing tools available and if money is extremely tight these options might be where you’ll want to start learning. However, if you can afford to invest in post-production software, I would highly recommend Adobe’s Creative Cloud package for photographers. This gives you access to both Lightroom and Photoshop CC which will allow you to process photographs with the same tools the pros use for roughly the same cost as a Netflix subscription. Considering the costs associated with lenses and cameras it is truly one of the best deals you will find in photography.

Post-production 101

No matter what software you end up choosing the initial learning experience will often result in a lot of experimentation. At the deepest level, post-production is a form of art. It is where you are able to add your own flavor to the images you’ve captured and make them your own.

While you can learn tricks and tips on how to process images and mimic these things in your own photographs, the best advice I can give you about processing is to experiment fearlessly. You will find that some experiments fail miserably, while others are truly magnificent. But because each photograph is different, learning high-level concepts of how the various sliders, buttons, and drop-down menus affect your image is more important than remembering +33 Exposure, -14 Shadows, etc.
The image before processing, right out of the camera.

The image after processing.
What Makes a Great Photograph

Understanding the concepts explained earlier is a great starting point. But great photographers, and ultimately great photographs rely on more than just the ideas and concepts. It’s about how these all interact with one another.

Great photography relies on a thoughtful composition. This means that you as the photographer are choosing the right composition for the specific subject you’re photographing. Just because The Rule Of Thirds is a great type of composition, it doesn’t mean that it’s the right one to use for every photograph.

The same can be said about other aspects of photography. Finding the right way to tell the story, the right way to expose the scene, the right way to process the final image - these all affect the final outcome. It takes a lot of practice, time, and energy to do these things as second nature, but that’s part of the reason you learn something new.
For more on post-processing images read these dPS articles:

- Post-Processing Tips for Beginners
- Understanding the Difference Between Photoshop and Lightroom
- Photoshop Versus Lightroom Which is Right for You?
- Post-Processing Tips for Overcoming Beginners Acts of Omission
- The dPS Ultimate Guide to Getting Started in Lightroom for Beginners
- 5 Common Post-Processing Mistakes to Avoid
- 5 Easy Photoshop Tips for Beginners
- 10 Things Photoshop Beginners Want to Know How to Do
- The Beginners Guide to Lightroom Presets
- 6 Photoshop Tools Every Newbie Should Learn
- 5 Practical Lightroom Tips for Newbies

For more in-depth learning check out our dPS course: Lightroom Mastery.
Remember, photography is truly fun and can be extremely rewarding to learn as a skill, but it is a skill that can take a long time to develop. Over time you’ll find yourself asking questions about your composition or the exposure that you’ve chosen for a particular photograph. You’ll start to hear yourself analyzing the light in a scene as you’re walking down the street with friends. Photography can change the way you see the world if you let it.

Over the next several months if you continue to work at improving the skills mentioned in this article you should see improvement in your photography. Remember to compare your photographs with those that you’ve taken in the past and not against other photographers, even if they are starting at the same time as you are. We all learn at different speeds, so all you need to focus on is improving your own images.
The final suggestion is for you to join a photography community. Whether it’s a Facebook Group, an online forum, or a local club, the support and encouragement you will get from other photographers will be priceless as you build upon these basic skills with more advanced techniques. Join us at the DPS Facebook group here, there’s usually a good discussion happening and lots of image sharing.

The best way to improve your photography is through developing a solid foundation of skills that you can build upon. This beginner’s guide was designed in a way that hopefully achieves that.
John Davenport is the creator of PhoGro - Gro' Your Photography a community that aims to help you grow your photography through engagement with other photographers. John also offers a free email course 6 Weeks to Better Photography that covers the most important elements for getting started with photography.

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