

Ten Steps to Better dSLR Photography

The Guide to Taking Control of Your Camera
and the Images You Create

an e-book by:
Douglas J. Klostermann



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Full Stop. *good writing for better photography*

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INTRODUCTION

Imagine that you have brought your digital SLR camera on a visit to a botanical garden, and are preparing to photograph the springtime scene before you. Like the image below, some nearby blossom-laden branches sway in the wind and a bright Japanese *torii* gate further in the distance glows in the afternoon light. With your camera set on Auto, what image will you capture? Perhaps the autofocus system jumps back and forth, trying to decide between focusing on the nearby branches or on the more distant gate structure, before finally settling on the *torii*. In reaction to the bright, sunlit landscape scene the camera selects a narrow aperture and renders the entire image from foreground blossoms to background trees in sharp focus. Perhaps the wind blows just as you take the shot and the branches immediately in front of you are blurred in the photograph because the camera chooses a relatively slow shutter speed. But what if you had a different image in mind? Maybe you wanted to capture the mood, feeling, and serenity of the garden as you were experiencing it, more like the image below (see *Figure 1*), with the foreground blossoms captured in sharp focus, the *torii* gate recognizable but softly out of focus, and the far background even more abstract.

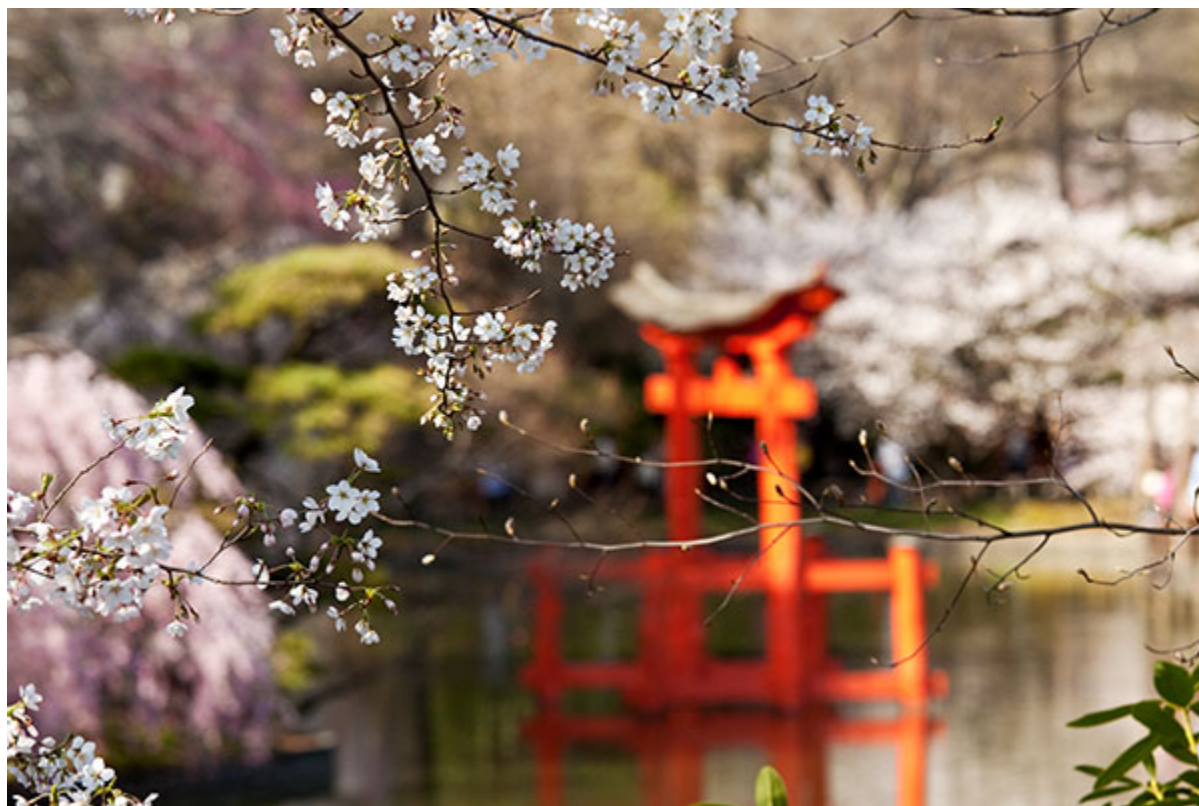


Figure 1 – Japanese Garden, Brooklyn Botanic Garden – Autofocus mode, exposure metering mode, aperture, shutter speed, ISO, and white balance all considered in creating this image. Shutter speed 1/125, aperture f/6.3, ISO 200, focal length 144mm.

Digital SLR (dSLR) cameras are powerful image creating tools which allow you to control numerous aspects of an image from the exposure and color tone to where the viewer's gaze is directed and how sharply the subject, foreground, and background are rendered. Using the camera's buttons, dials, settings, and functions, the photographer has the ability to translate their exact ideas or vision into a photograph, with intention and consistency. But this can't always

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happen if you don't really understand the different functions or if you surrender control and have your various camera settings on *auto*. While a dSLR is a sophisticated tool, it can only do what you ask of it. It cannot read your mind and your objectives and does not know that you wish to focus on and properly expose the small blossoms in the foreground, while making the background appear out of focus, and the branches to be caught still and not be blurred from the motion of the wind, on this bright, sunny day. You have to tell the camera to do all of this through the various controls and settings, such as the autofocus system (focus on the blossoms), the exposure metering mode (properly expose the blossoms and the background), the aperture setting (the out-of-focus background), the shutter speed (freezing the motion of the branches), the ISO (bright day) and the white balance (sunny day).

Take Control of Your Camera

These settings and more go into the making of every image, whether you or the camera controls them. In order to use your sophisticated dSLR to its full potential you have to take charge of the camera to ensure that you capture exactly the images you intend – by autofocusing where you want, setting the aperture or shutter speed that you want, and obtaining the exposure you want. This is why a dSLR provides you with all these controls right at your fingertips, plus all of the menu settings to specify exactly how the functions and controls operate. You don't necessarily need to actively set each one for each image, but you should understand how each is affecting your images and what the camera is doing if you choose to relinquish control of a specific function and allow the camera to make some decisions on its own. By understanding and making use of the various functions, you will be better able to consistently create the compelling images you are seeking. You will take the images *you* want to take, and capture more “keepers.”



Figure 2 – Take control of the functions and settings available on your dSLR camera in order to consistently capture the images you desire. Detail of the controls of a Nikon D5100.

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Using This Guide

This guide will introduce and explain ten basic dSLR functions and settings, and their related controls, which go into the making of every image. Although many of them are interconnected, you will see that by approaching them one-by-one you can more easily learn and understand what each one is doing and why it is important to your images. Capturing great images should not typically be a matter of luck and chance (although sometimes that comes into play even with professional photographers). Instead it is a matter of understanding and controlling your camera. When each individual step is understood, you can then bring them all together to take full control of your image making.

With digital photography there is no “right” setting or “best” setting for any given situation. A dSLR gives you quick access to the basic and essential settings because they often need to be changed to adapt to the subject, the scene, the lighting, and perhaps most importantly your creative intentions. There is no “correct” aperture setting for any given image or scene, no “proper” shutter speed setting, or no “ideal” histogram. The choices you or the camera make depend on a number of variables and relationships as well as the photographer’s desires. However I completely understand how a photographer can be overwhelmed with the multitude of choices, and thus needs a starting point. So each section will explain a concept, provide starting points for using it, and describe how to adjust and adapt it for various situations. I also include the camera settings used for the example photos. But since they are based on many variables including the lighting and time of day, the motion of the subject, the lens and focal length used, as well as the overall situation being photographed with a combination of moving subjects, still subjects, and changing lighting, these settings should not be viewed as “proper” or “best” settings. In truth, they more accurately reflect the reality of photography and adjusting (or failing to adjust) to fluid situations.

Learning to use and get the most out of a dSLR camera takes time, practice, patience, mistakes, and experimentation. You need to become familiar with all the camera’s controls and functions as well as the exposure concepts of digital photography. Begin with your camera’s manual and learn the names, locations, and functions of the various controls. Start to experiment piece-by-piece with the settings and concepts discussed in this text, trying them out in real life shooting situations. You will soon discover how each contributes to an image and how many of them are inter-related. Continue to learn and to photograph often and it should all begin to come together, sometimes slowly and sometimes in rapid spurts of discovery and understanding.

Various brands of cameras have different names for controls, functions, and settings, as well as different ways to access and use them, so I am not able to specifically describe how to utilize each control on your dSLR. I will, however, sometimes note the terminology that the different major camera manufacturers use. Please refer to your manual or to a guide that focuses on your camera to fully understand how to apply these instructions to your dSLR.

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ISO doesn't really do anything fun. High ISOs just cause the image to have more digital noise, which you typically want to avoid. Images from current dSLR cameras can have an acceptable amount of noise up to 1600 ISO and possibly even very useable images at 3200 ISO – though what is considered “acceptable” varies by user and situation. You typically want to use the lowest ISO possible for the situation, but you will need to change it to allow for the aperture setting or shutter speed that you wish to use.



Figure 9 – Farmer's Market, Cambridge – A slow shutter speed can express action and movement, such as the blurred motion of the walking shopper. Shutter speed 1/30, aperture f/13, ISO 100, focal length 16mm.

Aperture Priority Mode

Canon calls this mode *Aperture Priority AE Mode* or **Av** on the mode dial, while Nikon calls it *Aperture-Priority Auto Mode*, or **A** on the mode dial. Sony, Pentax, and Olympus share similar names and mode dial abbreviations. Many photographers, including myself, work the majority of the time with their camera set in aperture priority mode so that they have full control of the depth of field (dof) of their images. Depth of field is one of the most powerful composition tools available to photographers. It allows you to dictate exactly what parts of your image are in sharp focus and what parts are out of focus. By rendering your subject in sharp focus but making the background blurry or out-of-focus, you help to separate your subject from the background and guide the viewer exactly where to look in your image. Plus it makes your images look cooler and more professional!

Apertures are identified by numbers such as f/5.6 or f/16. In the viewfinder of your camera and on the top LCD screen (if your camera has one) you will just see the number like 5.6 or 16. On

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the rear LCD screen you may see F5.6 or F16. These numbers often confuse people because a seemingly “small” aperture number like $f/4$ is a large aperture opening, and a seemingly “large” aperture number like $f/22$ is a small aperture opening. But because they are fractions, $f/4$ really is larger than $f/22$. $1/4$ of a pie is larger than $1/22$ of a pie, right? So I will say *large aperture size* to mean a large opening or wide aperture (maybe $f/2.8$ or $f/4$) and *small aperture size* to mean a small opening or narrow aperture (maybe $f/16$ or $f/22$). A large aperture size will create shallow depth of field, which will make the background blurry, and generally creates a more dramatic or interesting photo that focuses the viewer’s attention on your intended subject. A small aperture size will create deep depth of field, where everything from the foreground to the distance is in focus, and is often used in landscape photography (see *Figure 10*). You can use aperture priority mode most of the time for non-action situations, to control the range of the depth of field and thus the amount of background blur.



Figure 10 – Longfellow House, Cambridge – A small aperture size can be used to capture everything in the image from the foreground (the sign) to the distance (the house) in sharp focus. Although $f/11$ was used here, $f/16$ or $f/22$ would have worked as well or even better. Shutter speed $1/500$, aperture $f/11$, ISO 200, focal length 16mm.

Putting Aperture Priority Mode to Use

To create an image with shallow depth of field, meaning just a small area of the photo will be in focus (see *Figure 8*), use a wide aperture (large aperture size) such as $f/2.8$, $f/4$, or $f/5$. The wider the aperture, the narrower the distance range that will be in focus. For example, if you use an aperture setting of $f/2.8$ and focus on the nearest petal of a flower, that petal will be in focus but the rear petals – and everything beyond – will be out of focus. You will see that more expensive lenses often offer wider maximum apertures while less expensive lenses and typical kit lenses

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offer less wide maximum apertures. You can learn much more about these lens differences including fixed maximum aperture lenses vs. variable maximum aperture lenses and how to choose a lens here: <http://blog.dojoklo.com/lenses/>.

To create an image with deep depth of field, meaning that much of the scene will be in focus from the foreground to the background (see *Figure 10*), use a small aperture size such as f/16, or f/22. Focus 1/3 of the way into the scene, meaning that with *Figure 10*, if I want everything from the sign to the house to be in focus, I would choose an aperture such as f/16 and focus on a point of the lawn that is 1/3 of the distance between the sign and the house. In the above scene, that is somewhat difficult as the trees and bushes are obstructing the lawn! But perhaps there is a tree, bush, or object located at that approximate distance.

If you are trying to capture a couple subjects in clear focus but they are located at varying distances from you, use a “medium” aperture such as f/8 or f/11. Focus on the middle subject and the depth of field will extend both in front of and behind where you focus. The common rule of thumb is that the depth of field (the area in acceptable focus) will extend 1/3 in front of the point of focus and 2/3 behind the point of focus. In practice, it is often more like 1/2 in front and 1/2 behind. But, depth of field varies with not only the aperture used but also the focal length of the lens (28mm, 200mm, etc.) as well as the camera to subject distance. Have a look at a depth of field calculator to see how this works: <http://www.dofmaster.com/>.

To put this into practice, I will demonstrate with a “mistake.” In *Figure 11* if I want all three dancers to be in focus yet the background to be out of focus, I would use a medium aperture setting such as f/8 and focus on the middle dancer’s face. The depth of field would then extend in front of and behind him, thus capturing the other two dancers in focus. In reality, I was working very quickly, lost track of my settings, had the camera set at f/5.0, and focused on the front subject. Therefore the second and third subject became progressively more out of focus. While it is still an interesting image, I feel that the subject of the photo is all three dancers, and all three of them should have been in sharp focus. The fact that the distant rock formation continues the line of the dancer’s heads and creates a great diagonal is a complete accident as far as I recall, but is the kind of thing one needs to take into account and can control for stronger images. This relationship between foreground and background as well as more about depth of field will be further explored in the **Improving Image Composition** section.



Figure 11 – Dancers at the Festival de Tinajani, Ayaviri, Peru – While the aperture setting of $f/5.0$ and focusing on the front dancer resulted in the front subject being in focus but the rear two subjects becoming progressively out of focus, a narrower aperture such as $f/8$ and focusing on the middle dancer would have resulted in a deeper depth of field with all three dancers being in focus. Shutter Speed $1/800$, aperture $f/5.0$, ISO 100, focal length 28mm.

***What Readers are Saying about Doug's Previous dSLR Camera Guides
including Nikon D5100 Experience and Your World 60D:***

This book, together with the manual that came with your camera, is all you need to start discovering the potential of this camera.

-Max M.

It's the first guide I've read which has taken me through all the settings in an understandable way. I now feel that I have control over the camera.

-Peter S.

I would recommend this to anyone who wants to get a quick start to using their camera. Manuals are nice, but this e-book highlights the important information and gives a quick easy to understand explanation of most all of the functions and controls.

-Ray M.

This manual is a clearly written, concise and useful explanation of the rationale for the seemingly infinite and often confusing settings options. Used in conjunction with the (camera's) manual I feel a bit more confident in understanding how to at last proceed in getting better photographs.

-WLS

A comprehensive and concise guide for hobbyists who desire to enhance their photography experiences. I highly recommend this guide to anyone who wants to get out of auto mode and learn how to take high-quality photos. The instructions and explanations are easy to follow and well organized. The guide is a portable class on digital photography! A must-have if you want to learn how to use your camera to its fullest advantage.

-Elizabeth J.

I don't know how I could fully take advantage of all the features my camera has to offer without this publication! It's well-organized, easy to understand, and succinct enough to keep your attention while still containing a wealth of information to get the most out of your camera. I'm very happy that I found this guide.

-Nathan K.

Learn more about *Ten Steps to Better dSLR Photography* and purchase it here:

<http://www.dojoklo.com/Full Stop/Ten Steps to Better dSLR Photography.htm>