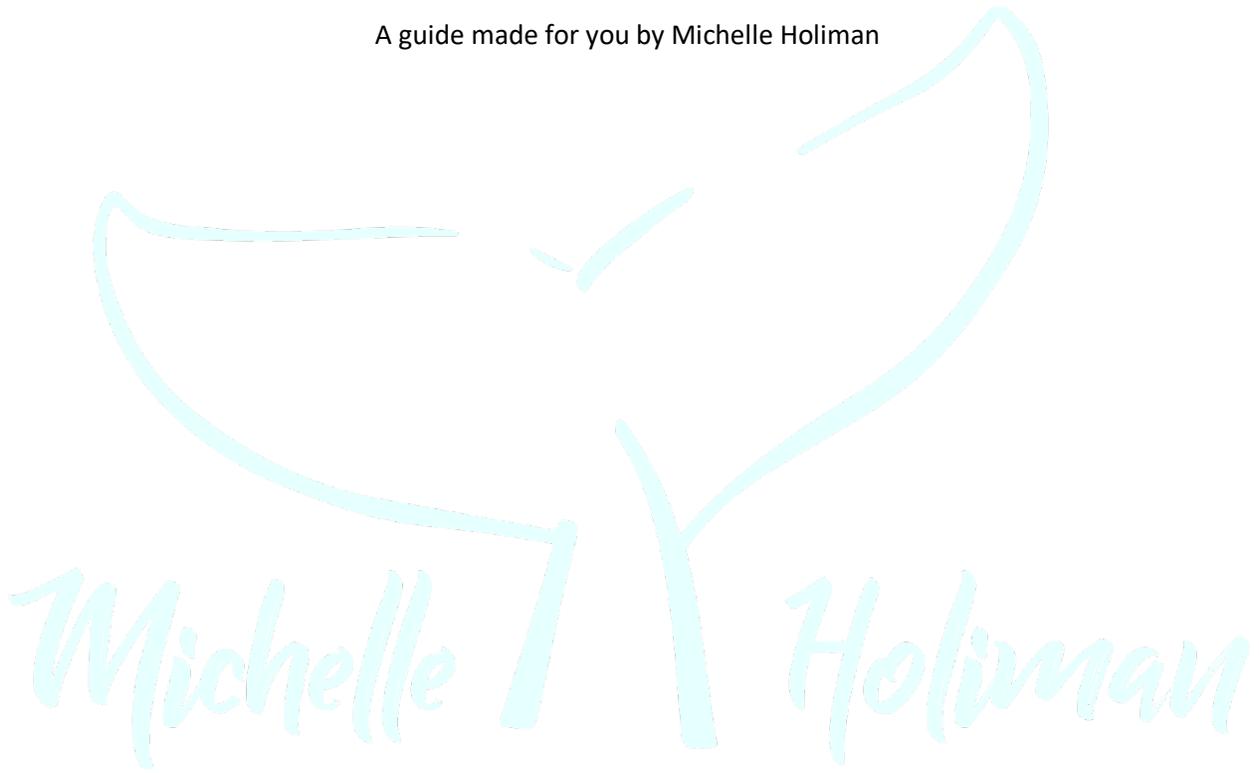


Beginner's Guide to Photography Field Manual

A guide made for you by Michelle Holiman



The goal of this manual is to get you off your “A” setting to your “M” setting.

There are 4 main settings (not counting the premade ones like action settings or portrait settings) on every DSLR and even some point and shoot cameras. The labeling changes brand to brand, but they are all the same. These are usually found on the top dial of your camera)

The first is the “A” setting, which is sometimes colored in Green all elements of exposure – which are addressed in-depth below - are controlled by the camera’s internal computer and light monitor in this setting.

The Second is the “P” setting, which stands for Portrait. It allows the user to control the ISO while the camera’s internal computer controls the shutter speed and aperture.

Next is the “Tv” or “S” setting which stands for “Time Variable” or “Shutter” Priority setting. They both do the same thing but are named by the brands that built the camera. In this setting, you control the ISO and the Shutter Speed, while the computer controls the Aperture.

After is the “Av” or “A” setting which stands for “Aperture Variable” or “Aperture” Priority setting. In this mode, you control the ISO and the Aperture, while the camera controls the Shutter speed

Lastly is the “M” setting which stands for Manual. This allows the camera operator to control all 3 elements of exposure – making room for them to move from a person with a camera to a person with creative control to, hopefully, an artist.

3 Elements of Exposure

Definitions

ISO - sensitivity to light

Aperture - controls the intensity and quantity of light entering your camera

Shutter Speed - controls the time of exposure to light

ISO Basics

The lower the number, the lower the level of grain/noise, the less sensitive your camera is to light. The higher the number, the more sensitive the sensor is to light, but the more noise.

When to use: Always *try* to keep your ISO low. Only change it when your area is too dark or you need your other settings exactly as they are, but also need a brighter image.

Examples:



This image’s color is really nice



Starting to see some discoloration



And here is a lot of grain and noise

Critical Thinking Check – Why do you think a photographer would use a high ISO?

Aperture Basics

The bigger the number (known as the f/stop) the smaller the opening in the camera (less light enters the camera.) The greater the F-stop the greater the clarity of your foreground and background. This is known as greater depth of field.

The smaller the F-stop the smaller (known as shallower) the depth of field. The opening to your camera is bigger so more light can enter. This means the main focus on closer objects will be sharp while the background is soft.



Top: a visual representation of aperture opening sizes and f/stops

Photo created by Koeppik, https://en.wikipedia.org/wiki/Aperture#/media/File:Lenses_with_different_apertures.jpg

Bottom: Left image uses a shallow depth of field from a small f/stop. Right shows a greater depth of field with a larger f/stop. Note the backgrounds.



Critical Thinking Check – In what situation do you think you would use a smaller f-stop? What about a larger one?

Shutter Basics

Measured in fractions of seconds. The larger the number, the faster the shutter, and the more frozen the motion. The smaller the number, the slower the shutter, and the more blurred the motion. If the camera has a “ mark, it is measuring in full seconds rather than fractions.

Freeze motion: Generally occurs at a shutter speed of 1/125th or faster

Blur motion: Generally occurs at a shutter speed of 1/30th or slower

These both do depend on your lens’s focal length. The larger your lens’ focal length, the faster your shutter speed will need to be to freeze the motion. Another rule of thumb photographers use is ensuring their shutter speed is 1/ the millimeters of the focal length you are shooting at if you are using a telephoto lens. So if you are shooting a 200mm lens, you will want a shutter speed of at least 1/200 to freeze motion.

Examples:



Blurred Motion by allowing the water move while the shutter is open



Frozen Motion (the bird’s wings + ocean)

Critical Thinking Check – If your shutter speed is 1/500, do you think that lets in more light or less light than if the shutter speed is 1/25?

The Light Meter AKA Your Best Friend



The nice part of modern cameras, is that you do not have to guess if your image will be evenly exposed – you have a built in Light Meter! The camera uses advanced technology to read a scene and your exposure settings and show you if your image is over or underexposed. This bar is found when you look through your viewfinder, on the top digital display, and/or on your main display screen depending on your model of camera. You will notice there is a negative and a positive side. If the main line is above zero on the positive side, your image is over exposed. If it is below zero, you know your image will be dark with your current settings. While you first start out, it is a good idea to try to line it up with zero so your exposure will be even. As you advance in photography more, you may intentionally choose to over expose or underexpose, but don't worry about this right now. Try finding your light meter and watch it change as you focus your camera on light or dark areas. Then adjust your aperture, ISO, and Shutter Speed while watching the meter, notice how it changes.

Putting it All Together

As you can see from these three elements of exposure, each choice you make has pros and cons. Here is a quick list of those here:

ISO

Pros: Increases sensitivity to light, which can be incredibly helpful in dark scenes

Cons: The higher the number, the more noise, which can destroy an image if pushed too far.

Rule of thumb with ISO – Keep it low, unless you are in a VERY dark scene. It is important to understand that no camera can see in the dark. Try playing with your ISO to see where the limits are. If you cannot quite tell looking at your camera's digital display, try viewing your image on a computer with a larger display.

Aperture

Pros: Can create a sharp or shallow depth of field, which can be useful to showcase an entire scene (like a landscape) or focus in on a subject (like a portrait)

Cons: The higher the number (like f/22 for example) the less light your camera lets in. The converse is true for the lower the number (f/1.8 for example) which would let in more light. If you aren't thoughtful about where your aperture is, you might end up underexposing or over exposing your scene, which leads to an all black or all white image. Not much you can do with that.

Important note – what your camera FOCUSES on and the relative blurry/unblurriness (is that a word?) of the background from your aperture are **NOT** the same thing. When you look through your viewfinder (the main eyepiece of the lens) you should see little dots or boxes lighting up on what your camera is focusing on. Much like your eye, your camera can focus on certain things in the foreground or the background. The factor in which your aperture makes the background blurry or sharp starts AFTER the point you focus on. If you are taking a photo of a person sitting on a bench with a tree behind them and you accidentally choose your focus point to be on the tree, and you have a shallow depth of field, that blur in the background will start after the tree. The person will also be out of focus in this scenario. If, however, you focus on the person's face, with the same shallow depth of field, you will notice that the tree is out of focus. I highly encourage all beginners to play with this dynamic between focusing the camera and noticing your depth of field.

Shutter Speed

Pros: Can blur or freeze motion depending on what the photographer wants out of their image.

Cons: As with the aperture, you can let in more or less light depending on how long your shutter stays open. If you are not mindful, you can have an improperly exposed image. What's more, because the shutter speed is the tool for motion, poor attention to the number can cause an image to be blurry that a photographer was hoping would be sharp. Remember, motion GENERALLY freezes around 1/125th of a second. This is nuanced though – you won't freeze a hummingbirds wings at 1/125 because they are moving far faster than that. You also can get away with slower than that speed if your subject is sitting very still (like a rock or pair of shoes.)

Keep in mind that once the shutter starts slowing down (like less than 1/30th of a second) there is more than your subject that can cause camera blur. Your own movements can cause a blur – from the subtle shaking of your hands, to stepping forward as you snap – you could be playing a part in blurring the motion if the shutter speed isn't quick enough to compensate for that. If you are shooting at slow shutter speeds, I highly encourage stabilizing your camera on something such as a tripod, a table, or a rock. You may not have a clear image otherwise.

The Goal of being a good photographer is to balance these 3 elements to create an image YOU want, while allowing your Light Meter to give you an idea of what your image will look like

Knowledge Check:

Answers are at bottom of page

1. You are taking a photo of a person on a bright day. It is at a public park and there are lots of trees, light posts, and volleyball nets in the far background. You know your ISO can stay low because there is plenty of light, so you set it to 100.
 - What kind of depth of field do you think would be good to flatter your subject best?
 - a) A shallow depth of field (such as f/2.8)
 - b) A greater depth of field (such as f/22)
2. You are on a bird tour in the everglades hoping to photograph birds in flight, what do you think a good shutter speed would be?
 - a) 1" because a long shutter speed means I have a better chance of catching a bird in flight.
 - b) 1/30 because I have a tripod which will limit my own blur
 - c) 1/500 because I want to freeze the bird's motion in flight
3. You are photographing a children's party indoors, there is only one window in the room, so light is limited. You decide you HAVE to have a fast shutter speed which will let in less light. After snapping a few photos, you realize your images are very dark, how can you let in more light?
 - a) Increase the ISO as high as it can go, which will help the scene be bright, crisp, and clear
 - b) Open up the aperture more by decreasing the F number. If it is as open as you need it to be, but still too dark, start increasing the ISO
 - c) Turn up your ISO to over 2000, then increase the F number to 22, which will let in more light

BONUS QUESTION

4. You are photographing your friend on a hike. You want to take a photo of them out on a ledge with a huge canyon behind them. How do you focus your camera?
 - a) Line up the focus dot on my friend and set my aperture to be a larger number so I can see both them and the background
 - b) Focus on the canyon and set a low number for the aperture so the canyon is in focus but the depth of field is shallow so you can still see your friend.
 - c) Give up because focusing is hard

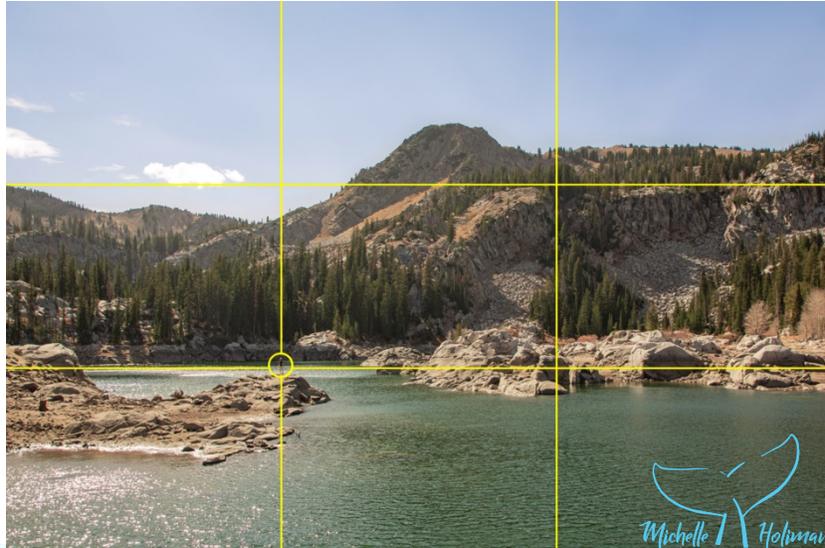
Answers:

- 1 = A. A shallow depth of field will cause the background to have a nice blur to it, which limits distractions, making the human the primary focus of the image.
- 2 = C. 1/500 will freeze the bird's motion, giving you a crisp, clear image (assuming you focus correctly)
- 3 = B. Let more light in first by opening up the aperture. Changing your ISO should be your last step as an increased ISO will increase the amount of noise and grain.
- 4 = A. Nail your focus to your subject and set your camera up to have a greater depth of field.

Composition Techniques

Rule of Thirds

This rule is a method of visually dividing your frame into thirds then aligning the important visual information, in this case a very small person, along those lines or where they intersect.



Framing

Images contain so much visual information, and as a photographer you want to pull a viewer's attention to the most important parts of the scene. Frames accomplish this by creating a space to focus on, which you can use to your advantage.

Texture

People love to be transported into a photo, to become part of it. Texture is all about how an object feels. If you can capture texture effectively, it makes your photo more real, touchable, and dynamic.

Pattern

Like texture, you can use patterns in your photography to add visual interest. Our brains look for patterns naturally, so using patterns in your photos is a great way to naturally draw a viewer into your scene.



Symmetry

Symmetry adds balance to your image and a sense of completeness. People love looking at things that are symmetric as it shows some kind of order in this chaotic world. Psychology even backs this up – people tend to look for symmetry, use it in your photography to create visual interest.



Leading Lines

Direct your viewer to exactly what you want them to focus on. Just like how framing shows a viewer what to look at, leading lines give a guide to where a viewer's eye should go. Use lines to emphasize subjects in your photos.



White Balance

Colors of light change as the day progresses. Light is measured on a scale of warm to cool with warm light being more yellow and cool being more blue. Roughly an hour before the sun rises and after it sets is known as “Blue Hour.” Blue hour is an excellent time for street & architecture photography, but can make landscapes more moody.



Right after the sun rises and right before it sets is known as “Golden Hour.” Many photographers love shooting during golden hour as the light is very warm. Golden hour is a great time for portraits and landscapes.



The goal of this manual is to get you started down the path of being a creative photographer, with an understanding of how cameras work. The next step in your journey is to stop and really look at your subject. Ask yourself what YOU want out of your scene, what would you like it to look like? Then move through the steps of making that idea a reality. Understand that there is nuance and creative decisions you can make outside of the rules and common practices. As a beginner, I encourage you to learn these techniques and work to master them. Once you feel confident in your exposure and compositional choices, know that you are not bound by them. Use these tools to inform your choices, but use your experience and artistic spirit to make your creative choices.

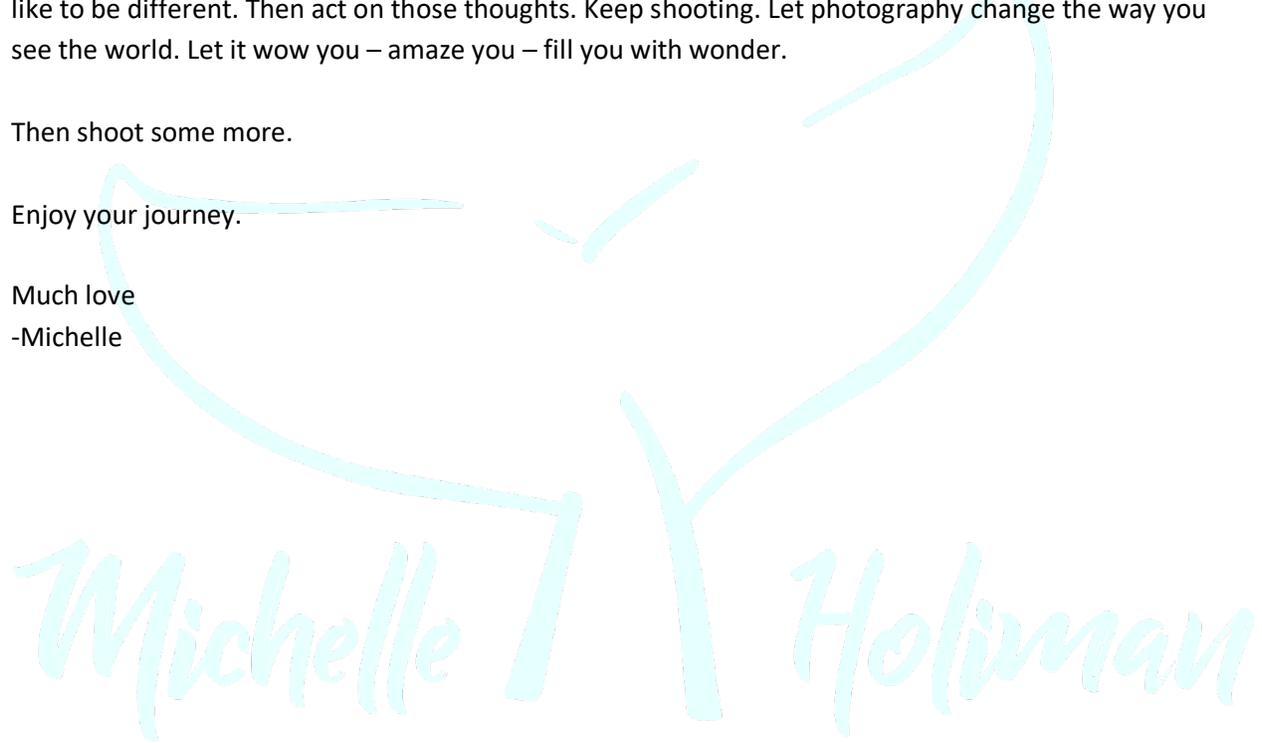
So what do you do now?

Shoot. Take photos as much as you can. Look at them. Ask yourself what you like and what you would like to be different. Then act on those thoughts. Keep shooting. Let photography change the way you see the world. Let it wow you – amaze you – fill you with wonder.

Then shoot some more.

Enjoy your journey.

Much love
-Michelle



Michelle Holiman

For questions, thoughts, or challenges. Feel free to shoot Michelle a DM on Instagram @michelleholiman