Silver Creek Workshops

Gulf Coast / Panama City, Florida

April 12, 13, 14, &15

www.silvercreekworkshops.com

in partnership with

www.roushphotoeducation.com

Preserving the Arts through Enlightenment and Knowledge

Jeff Roush, instructor
731.676.1520

"Live Life to the Fullest. You have to color outside the lines if you want to make your life a masterpiece. Laugh some everyday. Keep growing, keep dreaming, and follow your heart. The important thing is not to stop questioning." ~~ Albert Einstein

Goals of this Workshop

Organize Our Thought Processes

Cultivate Creative Thinking

Create New Awareness

Create New Habits

Expand and Raise Our Individual Skill Levels

Photographic thinking is a learned behavior and process.
Most of the difference in the skill levels of different photographers is the way they think
and the way this thinking manifests itself in the execution of their images.
Great Photography and Great Art is a very delicate balance and mix
of creative and technical thinking.
The better we become at mixing them the better we become.

One of our goals is to start to create mental space in our thinking processes
to allow for this new behavior.

"The single most important component of a camera is the twelve inches behind it"
-Ansel Adams

\

Ansel Adams has left an incredible impression on the photography field as a whole and he is quoted hundreds of times a day in different classes and workshops around the world. This particular quote strikes a fire within me. Adam's is one hundred percent correct … the most important component of a camera is the *photographer*. These are strong words. In fact, these words can be construed as arrogance and/or ego, somewhat patting himself on the back. But we photographers know the truth: Photography **is** about attitude. We know that we are the ones who create great photos, not our cameras. Unfortunately, many a novice, beginner, and laymen – those that don't know an f-stop from a bus stop – would like to attribute your art and talent to the hardware.

At this point, it would be easy spin this text into a tutorial on how to deal with such ignorance of the general public. However, that really serves no purpose. But, we are not in all cases the victim here. Our actions speak louder than words, and we photographers will, and always will, drool over nice equipment as well. Though our reason is vastly different, our actions are misunderstood by the laymen. As such, based on our misinterpreted love of equipment, our allegedly fancy cameras are many times credited for the quality of our work. So, doesn't it make matters worse when we lust after higher end equipment? I am of course not trying to suggest that you shouldn't long for improved camera gear. As a photographer however, you know that a camera upgrade will not improve you skill level much or create better photography. Chances are that your next upgrade is because you desire a specific feature, or you plan just outgrew your current camera. The desire to upgrade and add to your hardware set is only natural, but it is often misunderstood by the layman and we need to be sensitive to that fact. When prompted, we should certainly be doing our best to educate, without arrogance, for the sake of the art and for the sake of the community. But the issue goes beyond that.

The issue comes down to attitude – and it starts with you. Long ago, when cameras were expensive and extremely technical pieces of equipment, the line was much more defined. Those wanting to be photographers made great sacrifices to be a photographer. We sacrificed time, money, and often times a "real paying job" to pursue this art. But as gear is now more affordable, we have an influx of those who call themselves photographers solely because of their gear.

> If you truly believe that your camera or the piece of glass between your eye and the subject makes for better photos, then I must say that you are not a photographer.
>
> If you cannot create fantastic photos with a piece of junk camera, you are not a photographer.

Photography is an art. Art has rules – rules that can, will, and should be followed, and will be broken. But, if you're ready to break those rules, you better know that you are breaking them with intention, deliberate intention in fact, and not by accident. This is where we define art … is it art? … is it not?

You better know how and why you are breaking the rules. Dare I say that you should be as versatile within the boundaries of the rules as you are outside these very same rules? As a photographer, you must have humility. You must be able to admit your weaknesses at least to yourself, if not to the public. As a photographer, equipment should not matter. The equipment you have is a mere extension of the vision and creativity inside. Equipment does not define us as an artist, it merely helps us achieve our goals and solidly pallet our visions.

Part 1 - Taking Command of the Camera

This course is designed to assist photographers in understanding the necessity of learning the mechanics of our cameras. Using the mechanics of your DSLR, namely the F-stop and the Shutter Speed to their fullest enable us to demonstrate more creativity in our photographs. These two controllable settings allow us to control the physics of camera design allowing us to control focus depth and movement in our images.

As a "part-time" photographer or student I realize that you will not memorize all of this material. So, these documents will become a valuable resource for your future as you'll be referring back to them often. I suggest keeping them in a three ring binder along with a copy of the PDFs on your computer.

Lenses / Lens Lengths / Overview

Lens choice is a critical decision we make when putting together a photograph. Different lens lengths (millimeters) make photographs look different. A photograph taken with a 50mm lens will look a lot different than that same photograph taken with a 150mm lens, even IF the photographer moved away to shoot the subject crop the same. Remembering this will help later as we talk about the characteristics of lenses and how they can dramatically change each photograph.

Now that we are getting in to some of the visual components that we can control we need to develop some new habits as artists. One is to now take time to really look through our viewfinders and study the scene we are photographing. Take particular note of things like backgrounds, objects that don't' belong, cropping, subject placement, etc. By doing this simple exercise each time we shoot we'll eliminate a lot of the photographs we'll end up throwing away when we edit. Our goal is try to take control of the image we record; not only from an exposure viewpoint, but also from a creative perspective. The more we correct and finesse a photograph the better the end results will always be.

Before we get too involved in lenses it's necessary to discuss how they work and what part the F-Stop plays in the bigger scheme of photography. The diagram a little further down this page clearly shows the different f-stops in a lens. This is something you can physically see in the lens if you look in the lens barrel and fire the camera. Set your lens on something like F8 (manual settings) and fire it while looking in the lens barrel like you're taking your own photograph. You'll see it close down to F8 when you fire the camera.

Axiom to remember - F-Stop controls Focus

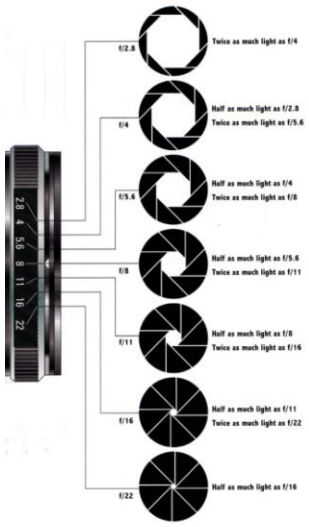
Lenses are simple pieces of hardware. When we fire the camera the f-stop closes to the setting we've set and the camera records the image on the CCD (Digital image recording chip in the camera) using the amount of light we've allowed to pass through the lens. Auto settings make this adjustment for you and the camera computer adjusts everything for the amount of light passing through the lens.

More importantly though, the F-stop determines how much, or how deep the "focus" actually extends through the scene we are shooting. This is a physics thing, similar to when we "squint" our eyes to make small print more in focus; the smaller F-stops make things more in focus in front of and behind the actual subject matter in the scene.

Take note that the F-Stops listed in this diagram are the following:

f2.8 f4 f5.6 f8 f11 f16 f22

wer digital camera systems have more F-Stops, for instance, between f8 and f11 there might be an f9 and an f10. The diagram uses the F-Stop numbers from before the digital cameras were available, back when cameras were mechanical and set only by the photographer. Keep this in mind so there is no confusion as to which F-Stop is used. F-Stop controls used to be on the lens barrel and were not part of any of the electronics. This has lead to some confusion because photographers now set it electronically, usually on a thumb/finger wheel next to the shutter button, and don't always realize the adjustment they are making actually produces a mechanical change in how the lens is operating. You can use ALL of the F-Stops on your camera, not just the ones we've listed in this lesson. In the diagram below you can see the actual differences in the F-Stop settings and how the iris in the lens actually changes in size.



s you can see in the diagram different f-stops are actually different size "holes". Light passes through this opening in the lens to the CCD in the camera. The different sizes (F-Stops) play a very important role in how this light is treated and processed as it passes through the lens. Its' purpose is controlling the depth of focus (Depth of Field) in the photograph we are taking.

Depth of focus, more commonly known as Depth of Field is a controllable element of composition, design, and styling that we can use in our photographs. The photograph below clearly shows the same image of a model holding a tube of lipstick; however, the focusing technique is obviously different. The product is in focus in both photographs, but the backgrounds are clearly different.

Background is OUT of focus using F2.8

Background is IN focus using F22

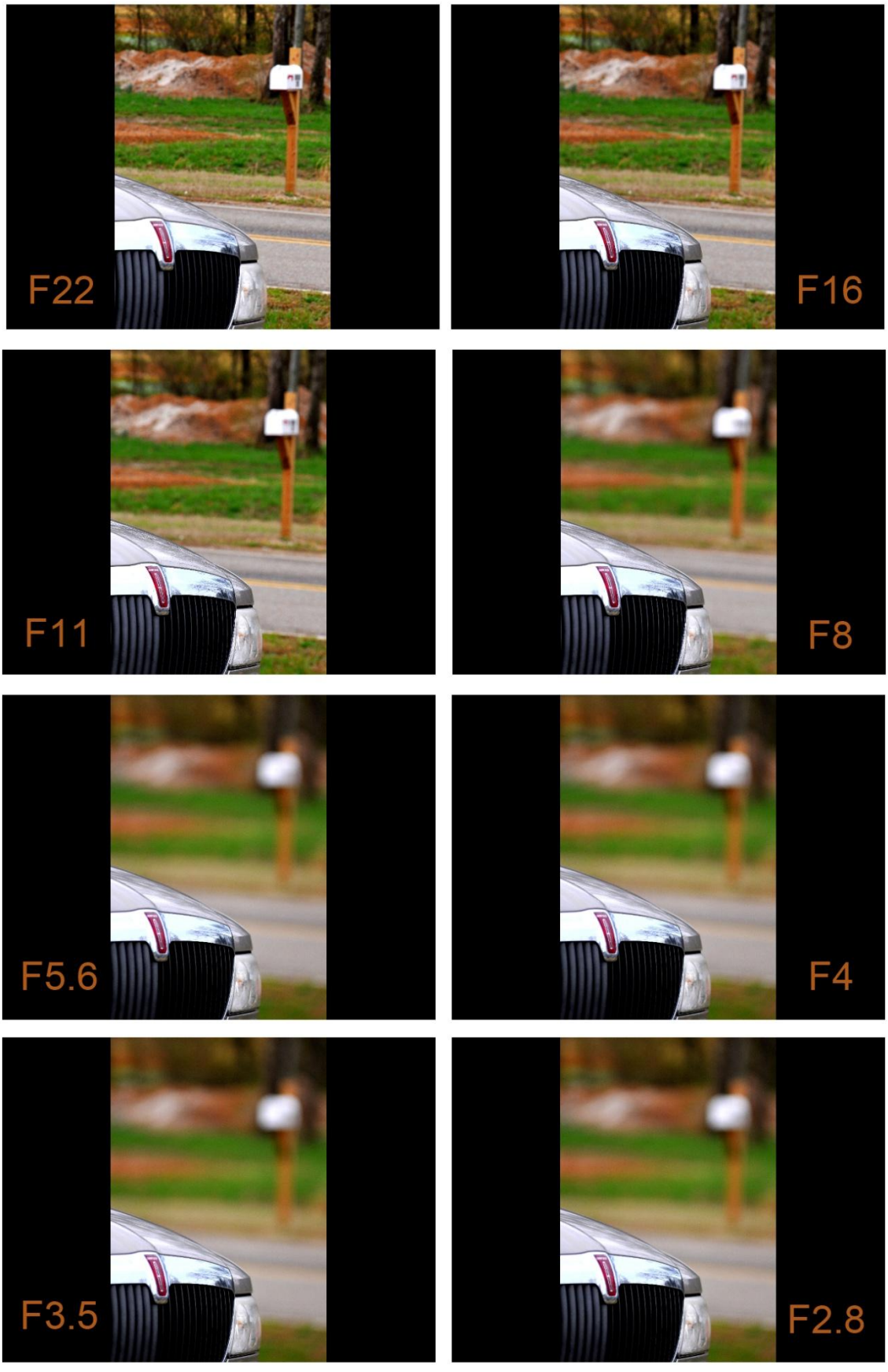
In the photograph on the left an f-stop of 2.8 was used. (Your camera may not have f2, but will have f3.5, f4, or f5.6). The photograph on the right is the exact same photo except the photography was executed using f22. The differences are remarkable in how far the focusing goes in to the photograph in both examples. This theory of controlling focusing depth is applicable to all lenses and all situations.

Keep in mind as you practice and understand this axiom that longer lens lengths (150mm and longer) will show MORE out of focus backgrounds (blurrier backgrounds) and the shorter lens lengths (50mm)

will show LESS (more in focus) out of focus backgrounds. If this seems confusing you're not alone. Take extra time to study the diagram above more closely before doing the next assignment.

I purposefully picked this simple setting to demonstrate how these techniques work. I didn't pick an elaborate / overdone / exquisite location intentionally. I wanted you to see this done in your "own back yard" so to speak, not in a setting that might detract from the learning points. I also wanted a shooting and working environment that you might be able to see yourself working in. You will notice I use the same type of simple subjects a lot of the time for these demonstration photographs. I do this because these specific images are created for this program only. The message is the technique being illustrated in the images and it is the most important visual element, not the subject or environment.

On the following page there are eight (8) identical images taken in a rural setting. All of the F-Stops were used: F2.8 - F3.5 - F4 - F5.6 - F8 - F11 - F16 - F22. These F-Stop changes made little or no effect on the car but made a dramatic change in the backgrounds. As the F-Stop was changed the shutter speed had to be changed reciprocally to obtain proper exposure of the image. Take note that the mailbox in the background slowly comes in to focus as the F-Stop gets smaller. The difference between F2.8 and F22 is remarkable. Also note that the trees in the background come in to focus in the smaller apertures (F-stops) also. This technique is how we control our Depth of Field / Depth of Focus in our photographs.


F22
F16
F11
F8
F5.6
F4
F3.5
F2.8

As you view images like this simple photo of the front of a car and a background try to start to feel and see the impact and clearly observe the subject isolation that can be developed by controlling the focusing depth in photographs. Impact is created by visually drawing attention away from unwanted objects like the trees and mailbox in the background. The more out of focus it is the less we see it. Plus, the more we isolate our subject by making other objects less noticeable the more impact we place on the subject or person. This is our goal in this case to photograph the person in a setting, not a photograph of a setting with a person in it.

Both of the above photo demonstrations were done using a 200MM Telephoto Lens. When using a long lens like this we maximize the "out of focus" background event. Had I used a shorter lens such as a 100MM the Depth of Field would have been much less. The backgrounds would have appeared more "in focus" throughout this example.

Depth of Field control also works in photography as seen in the example on the left. Here a longer lens 150MM was used along with an F-Stop of 2.8 to achieve this nice little cameo glamour photo of a cotton plant. Notice how the background is soft and blurry and the visual impact is all drawn to the stem and blooms; the parts that are in focus.

From a learning standpoint once you learn to do some of this "focus" control you'll find it easy to memorize the settings you used and be able to repeat them over and over when shooting similar subject matter.

So, the settings used here would work great for any photograph that is similar to this one. Included might be: flowers, birds, bugs, leaves, children's faces, a dogs head, etc. So, once learned this technique has many applications photographically and artistically.

Lens Choice and Scale

Lens usage and descriptions:

Wide Angle	**15mm-50mm**	**Scenics / Architecture**
Normal Lens	**50mm-100mm**	**Scenics / Events / Anything**
Portrait Lens	**85mm–200mm**	**Portrait / Close Ups / Nature**
Telephoto Lens	**175mm-up**	**Nature / Animals / Portrait / Close-Ups**

Choosing the proper lens for each photographic endeavor is ultimately important. Being able to effectively think and visualize how each lens manipulates and changes a scene is critical to making a proper choice.

First of all, let's figure out a few physical characteristics of each lens and how they affect what we see throughout view finder. Most of us have a zoom lens or two in our bag. Zoom lenses are great but many have missed the whole point of having one. To a photographer a zoom simply means that "one" lens can cover many of the different focal lengths they might use in their photography. For example, a zoom lens that is a 24-150 covers both wide angle (Scenics and architecture) and portraiture (85-150).

This is a handy and economical way to carry many different focal length lenses; however, zooms have a downside to them. They make photographers extremely lazy, and many times we "zoom" to make things "fit or work" in a photograph instead of making the proper educated selection to use the right focal length lens. Yes, we will have move closer or further to the subject, but, in the bigger scheme of things it's the right thing to do photographically.

So, a rule of thumb to think about when making a focal length selection is, first and foremost, choose the focal length predicated on the type of photograph you are producing, not convenience. If you shooting a portrait make sure you are using the proper focal length that applies to portraiture; minimum of 85mm up to 200mm, and if you are doing a scenic or nature photograph make the proper selection predicated on the scene.

Another factor, which we study in detail later, is Depth of Field and how it relates to lens selection and choice. Depth of Field is how far the focus goes in to our set, (see photos above). Each focal length lens produces a different Depth of Field, the longer lenses much different from the shorter lenses. A long lens inherently has a shallow (short) depth of field and shorter lenses have a deeper (longer) depth of field. For example: you are photographing your children sitting in a wagon in your back yard. You've chosen to shoot with your lens set on a length of 35MM and have filled the frame edge to edge with the wagon, leaving no dead space around it. In this case you will see almost everything in the background sharp and in focus. Now, if you back away and move your zoom lens to a length of 75MM and reframe the photo exactly the same you'll now have a photograph where the background objects are softer and less in focus. This is an axiom that is always true regardless of what we are shooting. Also, in this case, we'll see a notable change of size in our background objects; trees, buildings, bushes, etc.

Seeing it Work

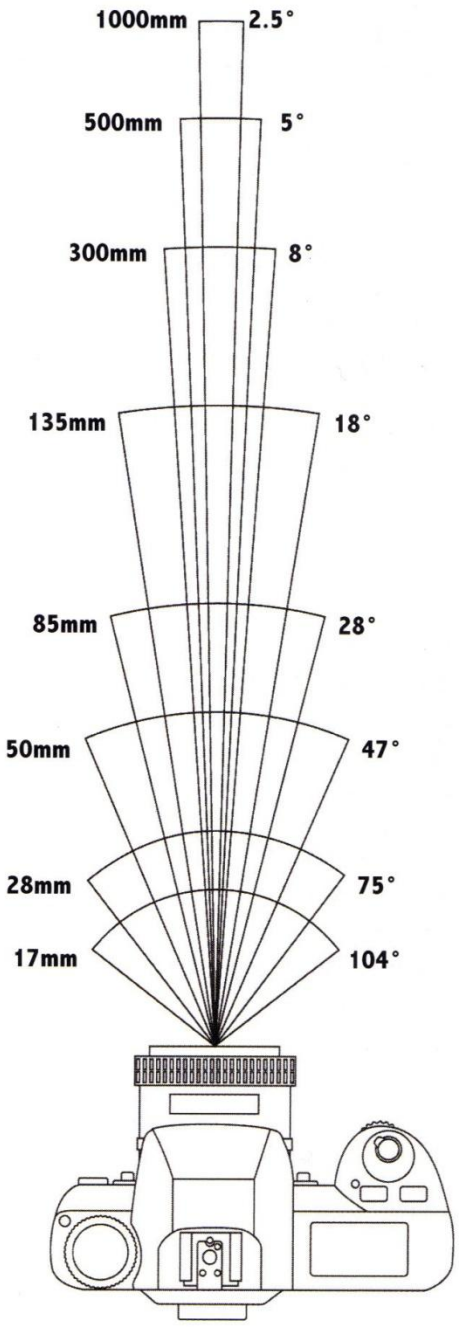
In the selection of photographs below you see a simple portrait taken in a rural setting. Take particular note of the changes in the backgrounds; what's included and what's not included and ALSO the size of the objects that are back there behind the subject. The first photograph was taken with an 85mm focal length lens, the second with 135mm lens, and the last with a 200mm lens. As you examine these images closely you'll see that there is a remarkable difference in the backgrounds, although the subject size remains the same. This difference is known as "scale". Scale is the difference between the "sizes" of the background objects to the subject matter. Knowing how to control the size of the background objects plays an important role in the overall image, its composition and its impact. Minimal changes make dramatic changes to the image and its overall impact and feel.

As you view the above images dissect every detail. Particularly notice the road position and the size of the tree back on the horizon. These photographs are shown as a comparison of lens lengths when shooting the same subject matter. The changes we see in these object sizes is called "scale". This is an important component in photography and in composition.

In the photo on left the really small tree in the background looks odd when compared to the larger tree in the photograph on the far right. Also, notice how odd the road looks in the photo on the left when compared to the one on the right.

You'll find us doing a lot of comparisons like this as we study. Often young photographers don't have these comparisons to actually view side-by-side. This type of adjacent comparison of images clearly helps understand some of the changes we can make by simply knowing which lens to choose in a situation. The photo on the right has a much more natural, balanced, and realistic look to it when compared to the other two.

Angle of View



As we learn more about out lenses we have found out the characteristics of each lens length is much different. Long lenses create the "shallow depth of field" look while wider lenses keep things "in focus" more. This lens trait is due to the physics of each lens and the way they are built.

Another built-in uniqueness to each lens length is the "angle of view" each lens covers. The diagram to the left shows us the live image coverage area of the different millimeter size lenses.

The angle of view is a consideration when making lens selection for different photographs. Not only does it affect the coverage from right to left and up and down, but it also affects the size of the objects in our scene. (Refer back to scale)

If your camera is tripod mounted and you view a scene with all of the different lens lengths without moving your camera position at all you'll see a dramatic change in the photograph; so much change that it's not really the same photograph. Try this, merely for your own satisfaction and see the differences.

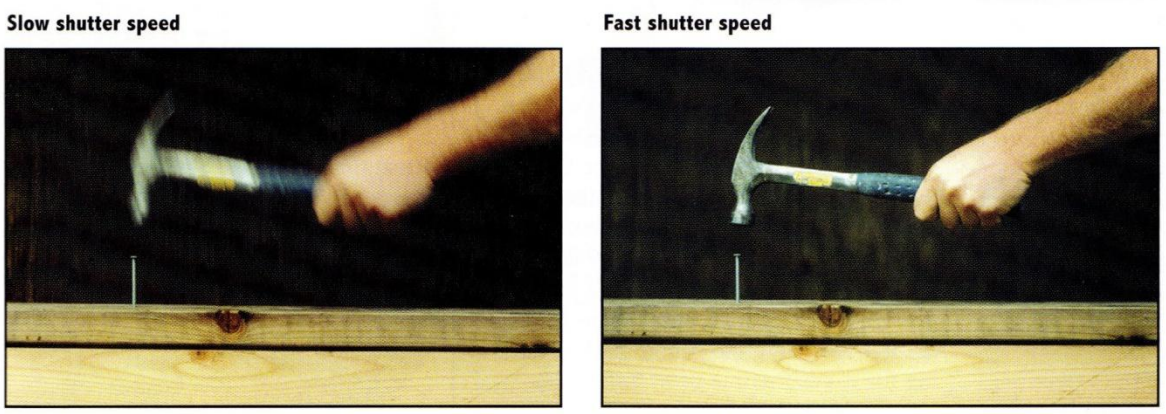
When making lens selection, we can use this knowledge to help us as we put together and compose a photograph. For instance, a 50mm lens setting when photographing a car will show a wide view of the background behind the vehicle. However, if we back away from the car and move our lens to 100mm the background shown behind the car becomes a narrower slice of the background area. This can prove to make a prominent change in the subject composition and the overall impact of the photograph. Being able to decide "what" to include in our images has a lot to do with proper lens selection.

Shutter Speeds

Inside your camera in front of the CCD (digital recording chip) there is a curtain, or shutter that blocks any light from hitting the CCD. This is called the camera shutter. When you press your button to take a photograph the shutter quickly moves out of the way for a very specific amount of time to allow the light coming through your lens to hit the CCD. This amount of time it is open is called the Shutter Speed.

Shutter speeds range from many seconds long to literally fractions of a second long. A typical shutter speed when shooting outdoors in the bright sunlight (Sunny 16 Rule from above) the shutter in the camera is actually operating at 1/100 of ONE second. This is a very fast movement for a mechanical device in your camera, but a very critical one.

Seeing it work



Axiom to remember - Shutter Speed controls movement.

Lens selection and "subject to camera" distance also plays an important role in movement. We have all taken photographs of something and not been able to figure out why it looked out of focus or soft. Normally, this error is result of choosing the wrong, usually too slow, shutter speed.

Below is simple to read graph of different shutter speeds and how they affect the overall outcome of each photograph as it relates to subject motion. Notice the importance of the camera-to-subject distance in this graph.

SHUTTER SPEEDS TO STOP ACTION PARALLEL TO THE IMAGE PLANE

Type of Motion	Speed	Camera-to-Subject Distance		
		25 feet	50 feet	100 feet
Very fast walker	(5 mph)	1/125	1/60	1/30
Child running	(10 mph)	1/250	1/125	1/60
Good sprinter	(20 mph)	1/500	1/250	1/125
Speeding car	(50 mph)	1/1000	1/500	1/250
Airplane		_____	_____	1/1000

Shutter speeds, when completely understood solve many problems we may have experienced in our photography. Often times softness or out of focus photographs are simply that was because the shutter was set incorrectly. Camera movement in our hands will blur a photograph and make it look like we shot it out of focus. Some of the movement we see in our photographs is "us" and not the subject.

It is physically impossible to hand hold cameras at slower shutter speeds such at 1/15 of a second. It's not that you are a "bad" photographer, it's just impossible to do; it's simple physics. Camera movement is also amplified when longer lenses are used (150mm or longer). If you not sure now whether or not you are using a correct shutter speed where camera movement is concerned then use a tripod. This will eliminate this problem.

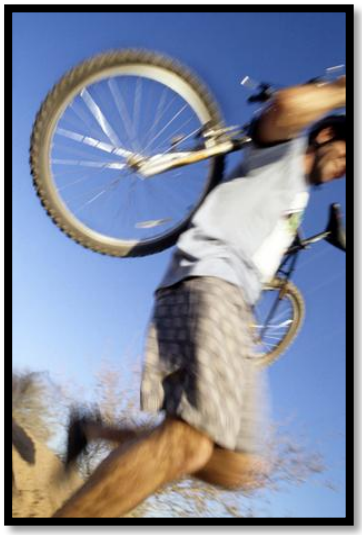
Fast shutter speeds can freeze motion to a complete stop as seen in the above image. The shutter speed in this photograph was set at a 500/second to freeze the motion of the splashing water and the motion of the boat as it crashed through the waves on the ocean.

So, when selecting the shutter speed for a photograph we have to think about motion if it's present in the scene. For example, you're photographing your child in a soccer match, motion is a consideration. We can make a conscious decision about whether or not we show motion in our image. A fast shutter will freeze motion and a slower shutter speed will allow some of the subjects' motion to blur on the image

The mountain biker photograph on the left was done with the intention of showing motion and action, along with capturing the intensity of his face and body. Careful selection of the time of day (for light direction) was important to capture all these elements. I was in a moving vehicle going the same speed he was traveling; thus allowing for the background to smear and blur but retain sharp focus on the subject.

The image of the freeway was done using a long (three second) exposure and F-Stop 5.6. Any time you are shooting things like this, which tend to be somewhat experimental in nature, it's a good idea to test a little bit first to make sure you're getting the results you envisioned. My camera was tripod mounted on a solid surface. Once I fired the camera I let go of it so I wouldn't create any "camera shake" in the image.

Some less expensive digital cameras don't have these slower shutter (1, 2, 3, seconds long" speeds on them, being it takes more expensive advanced electronics to perform these tasks. In the photographs on the left motion created by proper shutter speed adds to the overall impact and feel of the image. By perfectly timing the shot one can easily add motion to the composition, thus adding an element of impact, power, excitement, and movement. All of the images in this group were shot using a shutter speed of 60/second and F-Stops of 5.6 to 11 depending on the sunlight present at the moment we did the photography.



If your subject has movement similar to the photographs above you can be pretty certain to record some of it in your image if you set your exposures similarly to what was used here; shutter @ 60/sec and F-Stop @ 8 or 11.

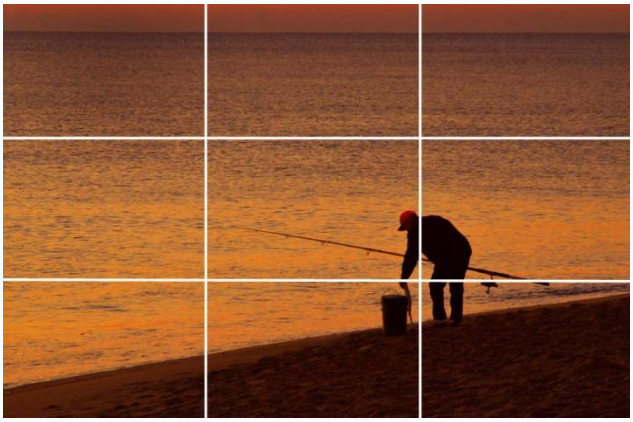
Axiom to remember and memorize-

Multiply your lens length (MM) by 2 to achieve the correct and safe shutter speed for hand holding a camera. Otherwise use a tripod.

Part 2 – Artistic Control / Composition

Rule of Thirds

This is a simple guideline that is commonly following by many visual artists. The goal is to prevent the areas of interest in an image from bisecting the image itself. This is easily accomplished by purposefully placing areas of interest in the grid pattern as demonstrated below. Note in this photograph how the image points of interest fall near the intersection of the grid lines

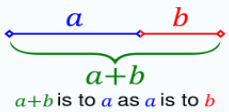


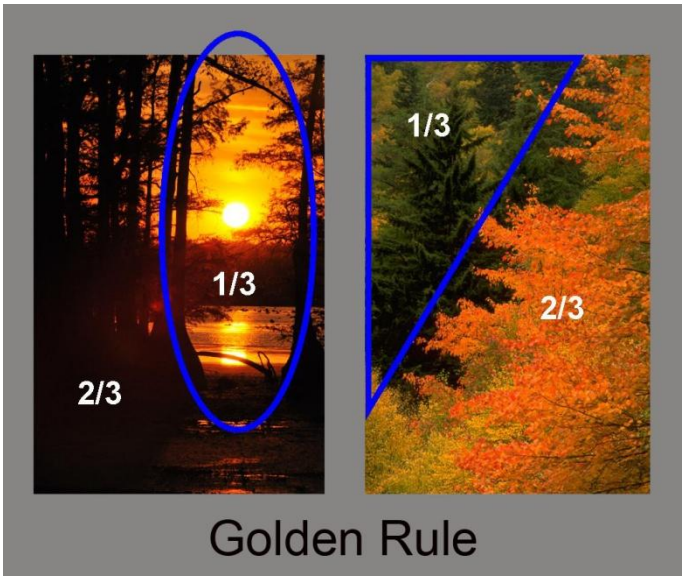
Simplification

Photographs that include a lot of clutter will distract the viewer from the main element of the photograph, making it difficult to identify the subject. By removing extraneous content the viewer is more likely to focus on the actual subject matter. Clutter can be reduced by controlling lighting, focus depth, and lens choice.

Golden Rule

Part of the symmetry and geometry of visual art is the "Golden Mean", sometimes called the "Golden Rule. This component of visual composition simply means that an artwork is divided into two unequal halves, usually being split diagonally. These two unequal portions of the work can be figured out to the exact proportion if you want to. Let's say your two unequal portions are labeled as "a" and "b". To size them according to the "Golden Mean" you would proportion them in this manner mathematically:





Lines

Lines can also create movement, horizontal, vertical, and diagonal. All of these create dimension and mood in the photograph.

Horizontal Lines - used mostly in landscapes create calmness, space, and peaceful moods.
Vertical Lines – create the feeling of height, grandeur, majesty, and rigidity.
Converging Lines – create dynamic movement and an active feeling.
Curved Lines – create a sense of flow and softness.

Additional Elements of Composition

_____

Point of Interest

Simplicity

Contrast

Balance

Framing

Viewpoint

Direction of Movement

Scale

Diagonals (diagonal lines)

Part 3

Photoshop, Digital files & Basic Retouching

Bit Depth & Resolution

As we discussed in the earlier paragraphs photographic files are made up of a binary set of numbers. Let's dig a little deeper in to this and see if it makes sense to us a little. First of all, computers use this binary form to record files. Binary form uses combinations of the digits (1) one and (0) zero. A "BIT" is the smallest unit of information, consisting of either a one or a zero. It can represent only a couple of different possibilities; yes or no, black and white, on or off. A "BYTE" is an eight "BIT" sequence of numbers that represent 2*8 (2 to the eight power) or 256. This could be black and white and 254 shades of gray for instance. The size of every photographic image is measured by the number of "BYTES" it contains. Here's the progression of terms used to measure and label image sizes:

BIT – smallest unite of digital information

BYTE – 8 bits

Kilobyte – 1000 bytes (actual size = 1024)

Megabyte – 1000 kilobytes

Gigabyte - 1000 megabytes

Terabyte – 1000 gigabytes

The above numbers are rounded off for easier understanding and application, and for our purposes the rounded off numbers are close enough. What's important for our understanding is that this size difference does directly relate to the image.

Bit Depth-

An images "technical quality" is determined by both the number of pixels and the number of possible values each pixel can hold. For instance, a BW photo is an 8 bit file, having white, black, and 254 shades of gray possibilities. A color photo has 24 bits per pixel (eight per color) gives us 16,777,200 colors. A color photograph is made up three images, if you can think of it as layered, one in each of the primary colors - Red, Green, and Blue (RGB). Each layer is 8 bit, offering the "darkest", the "lightest", and 254 combinations in between. These three layers, each 8 bit, when combined produce a 24 bit color image.

The human eye can recognize over 100 different shades of gray, but, not a lot less than 256. So, this bit depth is much more than adequate for the human eye being we are producing more variations that we could possibly ever see.

Resolution-

Resolution relates to the number of pixels in an image. The finer the resolution the larger the number

pixels will be; and the larger the file size will be. Digital files are like a patchwork quilt, if you can image a bunch of 1 inch squares of fabric in a quilt being sewn. The quilt is a picture of a rose that extends from side to side. Each pixel is equivalent to one – 1-inch square of fabric. The color and the location of each individual square is recorded in the binary number system. Put all these numbers together in one long string and you have a "digital file". The size of this file is determined by the number of squares. It makes sense that if this quilt were 10x10 feet we would have a fair amount of squares (pixels) in the total file. However, if this quilt were 50x50 feet and the squares were the same size it would have 5 times the amount of pixels; thus, five times quality and clarity. The more pixels (squares) the more detail is possible but also the larger the file.

Image Size-

Image size is the actual physical size of the photograph. Similarly to the quilt, if we were to spread both sizes out on the ground one would be a lot larger than the other. Image size, when looked at this was can refer the output size of a final print. A 5x7" digital file is exactly that, 5 inches by 7 inches, but the quality of this image is ultimately determined by the number of pixels contained within the dimension.

Resolution-

Resolution is the number pixels (squares) per unit of length in the image file. If the resolution is 4 squares per foot, then you would need 3 inch squares. You would need 16 squares (pixels) to fill a one square foot area. If you keep the space the same but reduce to smaller squares say "One" inch size squares you could make the same design area with much more detail. Doing this would require 144 squares to fill the same area as before.

Finer detail demands many more pixels, therefore a much larger file. Without adding the pixels and increasing the physical size of the image decreases the quality and resolution.

Compression-

The problem with the larger files sizes is transporting them. Not all email boxes can accept extremely large files; 3 to 10 megabytes in size. Luckily, there is "compression". A common program used for compressing image files is WinZip. Sometimes a 10 megabyte file will compress to a 3 or 4 megabyte file without any loss in quality once it is unzipped by the person receiving it on the other end.

Here is how compression works. Let's assume you're trying to compress a photograph of the ocean. It's sand, blue sky, and beach. A program like WinZip reads the binary file information of the image file you are trying to compress and determines how much of the binary information is duplicated. For instance, it will examine the blue sky and, for the sake of this example, let's say the blue sky binary code is XXXXXXXXXX, or ten xs's. Rather than transporting this code of 10 x's WinZip will take that code and re-write it to say {"x" times 10} instead of {XXXXXXXXXX}. The size difference between the two is where the

Megabyte size is reduced. All the program does is re-write the language of the binary code; once the image is received by the recipient and is "un-zipped" the language is returned to its original binary code. The image now returns to its original size, format and dimension. No information is lost in this transfer.

Typically, the time to use this is when you want to send a number of images to one recipient. The total size of all the files combined might be 3 megabytes (example only), however when zipped up using WinZip (or similar program) the total size might be reduced to 1.5 megabytes, thusly making it faster and smaller to email.

To compress a file here are the steps.

1) Go the folder where this file is and make a folder to put it in. Copy this image file to that folder; rename the folder so you know what it is.

2) Right click on this new folder and drop down to "send to". Then click on "compressed zipped folder". The folder with the image inside will be zipped. It will be called the same name as you named the folder but now it has an extension called .zip.

There will also be a zipper on the folder. Now the folder is ready to transport via email / ftp / or file transfer. There is virtually nothing that can damage a zipped file folder. It's like putting armor on the image in some ways.

Remarks-

One of the difficult things about understanding resolution and image size is that most of the time with large file sizes you can't see any difference on your computer monitor. This is because most monitors don't display enough pixels; it may display 100 ppi (pixels per inch) where your photograph might be 300 ppi. This difference in "ppi" is also why an image when viewed at 100% will go off your computer monitor. A 4x6 image with a resolution of 300 ppi will use up a 100ppi monitor quickly (three times the size) and go off the screen. This is ok though, we just need to realize that this happens because of the resolution of the image.

In PhotoShop or Adobe Elements under image / image size are the controls to change your resolution and dimensions (physical size). Take time to experiment with this control window and learn how it works. I know we've used this to resize your images for emailing, but it's time to really look and study what all these windows and controls actually do to change the file.

If / when you shoot a RAW file with your camera you might not be able to open it in PhotoShop If you have an older version or if you don't have the plug-in for your specific file type. It may require the software that came with your camera system.

*note- you may see a "new" screen if you are using PhotoShop 8 or newer when you open a raw file. This screen is an adjustment screen that only is present upon opening of a RAW file. Many adjustments can be made here before opening the file for retouching.

JPEG

Acronym for Joint Photographic Experts Group that describes a digital image file format standard in which the size of the file is reduced by compression. A JPEG image file name carries the extension "jpg". JPEG compression is "loosy", meaning it looses some image information as opposed to other formats like TIFF. A "high quality" JPEG file looses less than a "low quality" JPEG file.

TIFF

Tagged Image File Format. An uncompressed non loosy image format.

Raw

The RAW image format is the data from a digital camera as it comes directly off the CCD, with no in-camera processing performed.

GIF

CompuServe Graphics Image Format. A raster-oriented file type for image sharing across multiple platforms, either 1-bit or 8-bit, rendering from 2 to 256 colors or shades of gray.

Bitmap

An array of binary data representing a pixel by pixel (bit-mapped) image or display; also the image or display itself.

Kilobytes / Megabytes / Gigabytes / Terabytes

The factor is 1000 (approx). 1000 of one of these = 1 in the next category. Example - 1000MB = 1GB

Photoshop

Sizing –
click image
Image size
Set new size in window (make sure you're set on inches)

All photos to be used for the internet should be set at around 4" to 5" @100dpi
This size gives you a 500kb – 750kb file size which is good for emailing or posting on the web. Photographs to be printed by a professional printer (home printer) should be sized at the needed dimensions (5x7 / 8x10) and the resolution should be set at 300dpi. 300dpi is the standard used for printing.

Histogram -
click image
Adjustments
Levels
The histogram window loads

Brightness / Contrast -
click image
Adjustments
Brightness / contrast
Set desired levels of brightness and contrast

Color Correcting
click image
Adjustments
Color balance
The color balance window loads – adjust accordingly

Hue & Saturation
click image
Adjustments
Hue / saturation
The hue / saturation window loads – adjust accordingly

Info Window-
The "Info Window" is located in one of the tool pallets on the right of your screen. This window gives you the values of density of the RGB (red green blue) as you move your cursor over different areas of your image. Use this to help you as you do your correcting, especially in the blacks and the whites.

Part 4

When we view photographs that really and truly affect us in a positive way it is safe to say that the photographer knew these elements well; proper exposure, proper lens choice, correct combinations of shutter-speeds and f-stops, and good incorporation of the components of composition . When all of these elements are chosen and used properly in all of our photographic experiences we, as photographers, have reached an important plateau in our photographic education and maturity. This achievement is not to be taken lightly, so relish this moment as something you've strived to attain since you first got hooked on photography.

Applying what we know "practically":

Let's discuss this in a general application. There are many different photographic situations that arise in photographers journeys, but, there are also some situations that repeatedly arise for us, and those are the ones we first want to address.

Basically, for our purposes we'll be doing the following types of photographic assignments:

1. Portraiture

2. Scenics (landscapes)

3. Nature (flowers)

4. Sports (or any similar event)

5. General (cars, houses)

For each of these photographic styles we can set up a prescribed list of equipment we will use and also most of the camera settings before we even get there. This is a good mental habit to start now; figuring out your game plan prior to arrival. In most cases you'll be totally prepared. In some cases your preconception of things might not work, but at least you'll be more prepared being you have given the assignment some intelligent thought.

In all of the examples below we'll have our ISO set at 100, or the lowest speed your camera will allow. Listed in each scenario below are the starting points we should memorize, or at least mimic from our notes.

Portraiture- head and shoulders or half length of a person

Preferred Lens: 85mm – 150mm

Preferred F-Stop: F2.8 to F4.5

Preferred Shutter Speed: 150/sec to 500/sec

(Remember to use a tripod with the longer lenses)

Scenics- (landscapes)

Preferred Lens: 18mm or 24mm to 50mm

Preferred F-Stop: F11 to F22

Preferred Shutter Speed: 100/sec

Nature- (flowers, animals, bushes)

Preferred Lens: 70mm – 200mm

Preferred F-Stop: F2.8 to F4.5

Preferred Shutter Speed: 100/sec to 400/sec

(Remember to use a tripod with the longer lenses)

Sports- (or similar event)

Preferred Lens: 70mm to 200

Preferred F-Stop: F2.8 to F4.5

Preferred Shutter Speed: 100/sec to 400/sec

(Remember to use a tripod with the longer lenses)

General- (cars, houses)

Preferred Lens: Any

Preferred F-Stop: F8 to F16

Preferred Shutter Speed: 60/sec

(Remember to use a tripod with the longer lenses)

These are guidelines to follow as you approach these different scenarios. You may develop your own "look" for your specific style that may be different at some point in the future and may stray from these guidelines for artistic reasons. Photographers are artists, and our own vision will guide us as we learn more to use our tools. It is possible to use different combinations than illustrated here. However, before we do that it's necessary to learn the "tried and true" lessons from photographic masters of our time, and from our past.

With that being said, now do an assignment producing "two" each of the above scenarios. Our main goal is to use this guide and produce some photographs that reflect our vision. Another goal with this exercise is to start to formulate our own style and design in producing our photographs. If you don't have a sporting event you can cover easily then go to a park and photograph some kids playing, swinging, or running. Refer to our lesson on composition before doing any of these and include some of the components we discussed in your images.

Optional Assignment -

Practical Application / Study

1. Portrait

2. Scenic

3. Nature

4. Sporting Event

5. General (street scene, car, house, family picnic)

With each of these photographs that you are taking please provide a short written essay on your thought processes. This dissertation should include your ideas and goals before you start, your plan of "attack", why you chose the time of day, and what the overall feel of each photograph was to be. Along with this explain your camera settings fully and why you chose them. Also included information about your lens choices and why you chose the lens you used.

It's important with this assignment to develop YOUR ideas fully before executing them. This practice is a necessary "mind set" of any photographer or artist. Please do not use previously created images for this assignment.

Exposure & Artistic Control – Using Manual (M) settings on our camera.

We're going to set up an exercise example using our camera and tripod to better understand exposure. Our camera is on a tripod and we have framed a nice scenic at the park of picnic table with some stuff on it and perhaps trees and flowers in the background. It's a bright sunny day so we apply our knowledge of the Sunny 16 Rule and set our camera accordingly. The camera is set on MANUAL (M) mode and our zoom lens set to something close to 75MM.

ISO is set at 100

F-Stop is set at f16

Shutter speed is set at 100.

Before continuing make sure you understand the following. If this information is still not completely understood then we'll review it again and possible do some additional work and assignments specific to this technique.

The Lens Opening / F-Stop (f16) is a specific size.

The shutter (set at a speed of 100) is a specific length of time.

The amount of light that actually hits the CCD is therefore exact and specific.

If I change EITHER of the two, F-Stop or Shutter Speed, I need to change the other.

Now, as we think about this photograph we need to think of the two major elements concerning exposure; focus and movement. Typically in a shot like this movement isn't a problem being it's a photograph of a picnic table, so shutter speed should not be an issue. F-Stop controls focus and if we use the setting of F16 as previously mentioned we shouldn't have a focus problem either.

Once that theory is understood we can experiment and change the settings. In fact, changing them is very easy. If we change the shutter speed faster or slower we have to make an adjustment in the f-stop, bigger or smaller. The relationship of the f-stop and shutter speed is relative, but reciprocal. If one is changed, the other needs to change also. Remember, the goal is to keep the same amount of light passing through the camera lens on to the CCD.

This chart helps understand the relationship of f-stops and shutter speeds as they relate to each other. Each of the following combination will give you exactly the same exposure on your image. However, the changes in f-stop and shutter speed will affect the overall look of the photograph you are taking.

From now on we will write the F-Stop/Shutter Speed combination in this manner: F16/100

F-Stop	2.8	4	5.6	f8	f11	f16	f22	f32	f45
Shutter Speed	3200	1600	800	400	200	100	50	25	12

(You won't have f32 or f45 on your camera, but they do exist on some and for the sake of understanding we're including them in this example.)

F16

F4

So, here's the interesting part of photography, and here is exactly WHY we learn to operate our cameras on manual settings. You can see your combination of f16 and 1/100 of a second on the chart above. In addition to getting a proper exposure at "this" setting we can also get a proper exposure at any of the other combinations of F-Stop and Shutter Speeds. Yes, this is where we can actually make adjustments in F-Stop for Depth of Field control or adjustments in the Shutter Speeds for control of movement in our photographs All of the combinations above give you the exact same exposure (the specific amount of light). The only differences between them are the Shutter Speeds and F-Stops; thus, noticeable changes in your photographs.

As illustrated above you can see the change from using a different set of exposure numbers from the above scale. (This setting was chosen purposefully for the ugly background) Sometime, as we frame up a photograph we need to make educated determinations of what we want to see clearly or not in our images. These two photographs clearly demonstrate DOF control. In many cases the situation forces us to make changes in DOF simply because of where we are and what's in the photograph. Although the samples are both less than perfect overall because of the composition the one on the right is more passable than the image on the left. Further into this lesson we talk about how the "area of focus" works, so we'll be referring back to these images later.

Changing from our starting settings of F16/100 to any of the settings will change the overall look of the photograph, the focus, and movement. In our example of a scenic at the park for instance if we use a different combination of settings; let's choose f5.6 / 1/800 sec. This will change the depth of field (depth of focus) in the photograph. We're mounted on a tripod and shooting a scenic so there is not much for a shutter speed change to affect, unless there is movement "in" the photograph such as blowing and moving leaves on trees or children playing. If there was movement such as a waterfall in our photo the faster shutter would freeze the water perfectly still. If we go the other way and use the setting of f22 / 50 sec our photograph will now look different, as the water will now streak and smear instead of being perfectly still.

Practical Application / Study (Optional)

Re-create a situation like the above portrait example, or any other subject matter that you can find where you have this trio of objects – a foreground object, a subject, and a confusing background. Your camera should be on "M" manual mode. Now, using your knowledge of depth of field control produce two photographs of your scene, one that's obviously wrong and one that is more correctly executed.

Additional Control Features

Most modern day digital cameras have a "focus lock" on them. When you view a scene you put the subject you want to be in focus in the small square in the viewfinder and then depress the shutter button slightly. The camera will focus to that subject and stay set at that setting as long you hold the button slightly down. You are free to recompose your photo at that point without risking the auto focus changing to a different subject and distance.

The photo to the left of the white flowers with the out of focus weedy background is an example of how focus lock can work to your advantage. Focus on the flowers first with the spot focusing square in the viewfinder. Then, while continuing to depress your shutter button slightly re-frame and re-crop the photo like you want it to look. The auto focus will remain locked on the flower distance setting and not move to the field of weeds further back in the scene.

The portrait to the right demonstrates the exact same control as the flower photo above. In this case, as you did before, focus on the face of the person first and hold down the shutter release button while you re-crop and compose your photograph.

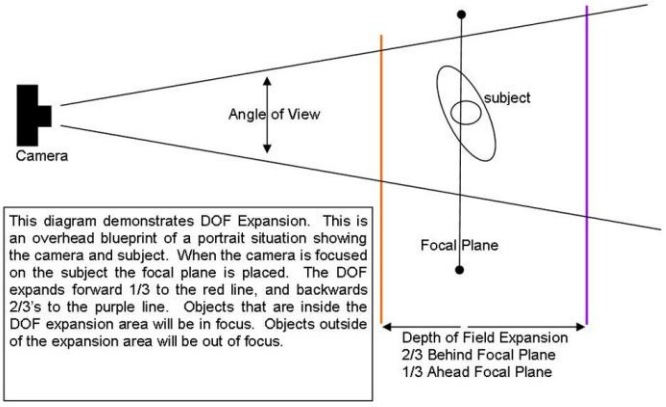
Focal Plane

At this juncture I'm going to introduce a new photographic term to learn and study. This new term is "Focal Plane". The focal plane is the exact focusing point/distance from your camera that you focus to. If you can imagine looking at the park scene with the picnic table we have talked about. We have a choice where we actually focus our camera, providing the Auto Focus is OFF. We can focus on the front edge of the table, the back edge, or even the background of flowers and trees. The focal plane is parallel to the CCD Plane (film plane) in the camera and can be set where we want our central focus point to be.

When we reset where the focus actually hits we're changing where the focal plane is being set. Anything that is that exact distance from the camera will be in focus in within the focal plane. In the example below of a simple portrait of a person (aerial view) I have illustrated some points to study and understand.

The Depth of Field (focus depth) expands from this plane of focus. It is important to know that the expanding DOF moves and enlarges this way:

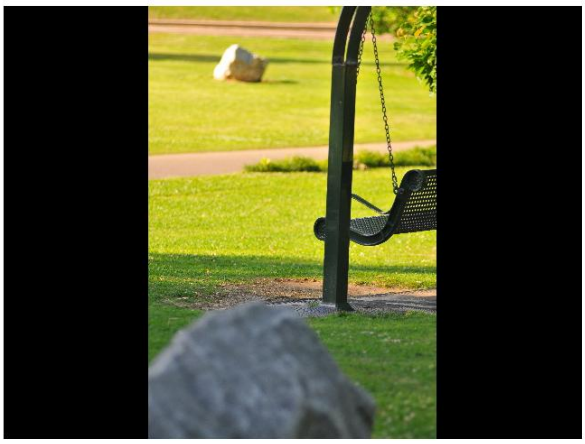
1. 2/3 is behind the subject matter.
2. 1/3 is in front of the subject matter.



Keep in mind that this specific example is only true when all of the elements remain constant.

- - If the F-Stop is changed the DOF changes accordingly.
- - If the lens length is changed then the DOF distances are changed.

In the sample below we have focused the camera on the swing at the park. Notice in the first photograph how the rock in the foreground and the rock in background are both out of focus and soft.



The camera in this first photo was set on f2.8, minimizing the DOF – front to back as illustrated above. Both rocks are soft and out of focus.

Photograph two is shot exactly the same except the f-stop was changed to f8 instead of 2.8. Notice in this image that the rocks are both more "in focus"

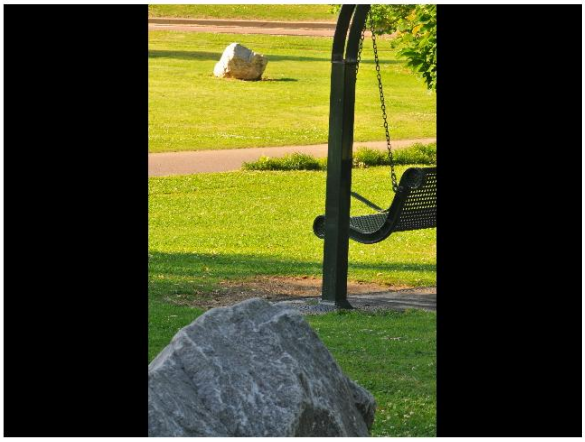


Photo three is the same except that the f-stop was changed to f22. Notice in this photo that the rocks are both "in focus" now

Refer back to the portrait above where the model is standing next to the poles and apply this theory to what you see there. You'll notice that the DOP expands to the point of keeping the foreground pole "in focus" in the F22 photograph, but it falls way out of focus in the F4 image.

Part 5

Computer Organization

One of the tasks we have to eventually face is organizing and storing our images. Perhaps this has been a problem already. If it is, you're not alone. Many photographers struggle with this on a regular basis so don't feel like you're the only one. We are going to discuss a few things that might make your organization and storage a little easier and hopefully a bit neater. Hopefully you've advanced to a card reader by now and are not using the download software provided by your camera manufacturer.

Here are some tips that will help us keep organized:

When you download a new batch of photos put them where they belong right away. This is done by creating a new folder somewhere on the computer or on the desktop each time you download. Put the images in there and label that folder accordingly now. A big mistake many of us make is putting tons of unrelated photographs in a folder together and then leaving the mess there until we need to find one. Obviously, this isn't the way to keep image files organized. If you're downloading a mix of images that might be part sunsets and the remainder a portrait, for example, then split them up immediately after you download the files. Procrastination at this point will only create a disorganized file system quickly.

Original files should be backed up immediately. Burn a CD or DVD right now. Put this disk in a disk folder where you can find it, making sure you label it accordingly.

File and folder names that you create should identify the subject matter. If you're a nature photographer then you'll have a lot of photo sets that are nature related; sunsets, clouds, skies, mountains, flowers, etc. If you're a portrait photographer then your file folder / disk names should correspond to the name of the subject along with a date.

As you retouch and fix up your images in Photoshop or Elements make sure that you don't overwrite your original files if you haven't backed them up. This is a dangerous mistake that many photographers make unknowingly. If you have not backed up make sure that you don't hit "File / Save" by mistake and overwrite your original. Use "Save As" and rename the file.

Another common mistake by photographers is to reducing the image size to be able to send it via email to someone and forgetting to do a "save as" and inadvertently do a "save". Now you're left with a very small, unprintable, mostly unusable file size of that image. I've also seen photographers spend hours retouching and correcting an image and then hit "file save" only to find that the retouching they did is not what they really wanted or what their client wanted. So, a word of caution; be very careful with original files. They are more important than we sometimes realize.

Another haunting event that we will all face someday is a computer crash or a hard drive meltdown, either of which leaves us with unrecoverable image files. This is another good reason to back up your image files on CD's right away and get them off the hard drives.

Part 6

Lighting

Changes in light will change the way photographs look and appear. Whether you move your perspective or change the subjects' position changes in light can be remarkable. Our problem solving abilities concerning light and how we approach situations now is going to change as we strive for a new level of understanding. When working in available light this medium is our pallet and our ability to use it to the fullest depends on our understanding of its characteristics and qualities.

Within our grasp are many types of light, and we are going to study these as they apply to portraiture. Available light, the light that already exists in a scene, can show many different characteristics. It can be from direct and contrasty to diffused and soft. Each of these applies a different character of light on the subject and our goal in this Segment is figure out which is best for all the different circumstances we encounter.

First and foremost, when using available light consider its direction before you set up anything. Direction of light in itself can dramatically change the look of a photograph, the look of the subject matter, and also the overall feel of the mood you present with the light you've chosen. It doesn't matter what you chosen to photograph the light HAS to be right for the scene. The following photographs illustrate different lighting situations, different times of day, and different subject matter. In these examples the photograph was designed, composed, and shot when the light was perfect – perfectly placed on the subject. The light also becomes an important element

In this photograph of this college campus building the sunlight perfectly illuminates the walkway and the front of the building while silhouetting the tree and bushes. Imagine this photo when the sun is behind the structure.

It wouldn't be the same at all. In fact, there is not a good photograph of this building from this angle except at THIS specific time of day. You may find this true when photographing outdoor subjects.

Examine the placement of the sun in relationship to your photograph and think about how different positions of the sun will affect the overall look of your image. You may find yourself coming back at a different time to execute your photo.

This image is the cover photo on a current issue of a catalog for the manufacturer of these motorcycles. Notice how the machine is nicely illuminated by the sunrise; the chrome and paint job really glisten in this light.

Putting your subject matter in the right place and at the right angle in the light is imperative and it only enhances the other components of the photograph.

The two above images are actually two different problems photographically. In preparation and planning alone they represent the two main questions we answer before we shoot, and before we arrive to shoot.

In the first photograph of the building the solution with lighting was finding the exact time of day for the sun to be positioned as it is – illuminating the front with that very soft early evening glow of warm sunlight. To find this light I had to "scout" the location a few times in a week and simply watch the sunlight fall on the face of the building. Once I found the correct time all that was left to do was to find the right spot and compose an image.

In the second photo, the one of the motorcycle it was necessary to fine the right road and location at this time of day so that the product would be facing exactly in this position relative to the sunrise. Scouting was necessary and some test shooting was very helpful to ensure I had found the right spot. This type of "short focus" – "moving motorcycle" photograph is hard enough without worrying about the light on top of everything else. With that problem solved I was able to concentrate ONLY on composing a great motion/movement photo of the product.

Remember, the better job we do in execution of ALL of our images the less time in post production / PhotoShop we have to spend. If you ever sat at the computer retouching one image for over an hour you know the frustration I'm talking about. The more time we spend in the beginning stages of production does affect the time we spend later in post production. Our goal then becomes to shoot digital files that need little post production time. This is where our workflow habits need to start to take the form of "efficiency".

Lighting Basics-

When we read beginner photographs books everyone always emphasizes to “put the light behind your camera and over your shoulder”. Oddly enough, when given the chance, most will do this before even considering any other option. We feel, for some reason, that this is the “best” light on any subject. As you might guess, it is not. The best light is the light that assists in emphasizing your message, creates impact, and helps create the mood and feel of the photograph you're trying to achieve. Following the “over your shoulder” axiom is a safe solution but it is usually the most uninteresting light that exists in any scene.

In portraiture, there are a few conventions that we can follow right from the beginning.

Rule 1) Do not use the mid day direct sun (10-4PM) to light a subjects face. Personally, I use the “no direct sun on the face” rule during these hours. Early morning or late afternoon direct sunlight can work great if placed properly on the subject. . There are exceptions to the rule and there will be times we are forced to use this light but since we are the ones creating our own photographs right now we will abide by these rules.

Rule 2) Use the light to enhance your scene. Consider all the alternatives; will moving your camera make a positive change, will moving the subject make a positive change, will changing your viewpoint make a positive change, etc. This decision is crucial the outcome and over all look of your photograph.

Rule 3) Consider and analyze the light you have to work with and evaluate its characteristics; is it direct, is it diffused, are the shadows hard-edged? After making this evaluation consider again your alternatives if you feel there might be a better lighting treatment for your photograph.

When we examine other photographs, portraiture or otherwise, we might notice that most of the images seem to use available light in this manner. Photographers in general do look for the right places and the right time of day in these places. Considerations are also made on backgrounds and other objects that might be included in a photograph for each photograph. It is a good idea, especially if you are wanting to do portraiture as part of your regular “business” as a photographer to search out places and make lists of locations that will work perfectly for a few different types/looks of portraiture. When you see a display at the mall of some photographers work and examine it closely it’s not a mistake or “sheer luck” that the locations he/she have found work. Find locations that will work for you in regard to light positioning, background, and overall compositions.

Ratio

When we talk about “ratio” in photography we are talking about the difference between the highlights and the shadows caused by the light situation we are viewing. If we take, for example, a headshot portrait of a person that we have set up and shoot at 8am in the morning and have the person facing north we should have a side-lit subject with the one side going darker than the side facing the sun; not to hard to visualize. Imagine now the same exact scene and person at 12:00 noon. Nothing has changed except the position of the sun which is now directly overhead.

Considering now both of these examples – let's talk about metering and exposure. If we meter for the highlighted skin in both examples will we get the same f-stop / shutter speed? No, of course we won't. The early morning sun is less intense than the sun at noon. There is a big difference in the amount of light present on the scene. The only constant is going to be the shadows; they remain pretty close to the same exposure. This does us no good though since we don't meter for shadows on a portrait, however, in the bigger scheme of exposure it does create a problem. In the 8am photograph, for the sake of comparison, let's say that we have an f-stop of f5.6 and a shutter speed of 125sec. Four hours later if we read the same scene we'll have an f-stop of f11 and shutter speed of 125sec. Why? Obviously the light source is brighter at 12:00 noon than it was at 8am. Why? Had you paid attention in science class in the 5th grade you would know that the sun is actually closer to us at noon; thus, it is much brighter in intensity. This theory is no different than moving a lamp closer to your reading chair at night; closer means brighter. Even though the lamp is closer and illuminates your book it doesn't illuminate the shadows on the opposite side of your chair. Those shadows remain pretty much the same.

Now, knowing this it does make sense that our exposure will change on the highlighted parts of the skin in our headshot/portrait? It also makes sense that the shadows are going to appear darker at the f11 exposure than they were at the f5.6 exposure. In fact, shadows at 12:00 noon almost go completely black in some cases.

So, that being said, the ratio is the "spread" between f-stops when doing an exposure, sometimes creating blacker more "blocked up" shadows in a photograph. This happens when the spread is too large; the ratio to high. This is why we avoid lighting a subject with the direct overhead sun during the mid day hours. The ratio is so wide that to expose the skin tone properly the shadows stay very dark if not black.

Further in this section you'll see photographs taken that illustrate ratio to us visually. Take particular note of the portrait photographs taken in direct sunlight during the mid-day hours and it will make a lot more sense as to why we avoid these types of lighting situations.

Outdoor Lighting Control / Times of Day

Available light outdoors comes in many flavors. Each has a look all of its own. We are going to study and work with four different types of light. The thing to remember when as we learn about these different styles is that there isn't a right or wrong application. Choosing a lighting style that you like is the key. The best scenario is of course, to learn to work within the constraints of all of them. A well rounded photographer can shoot in any of these and create great very nice images.

Direct Sunlight –

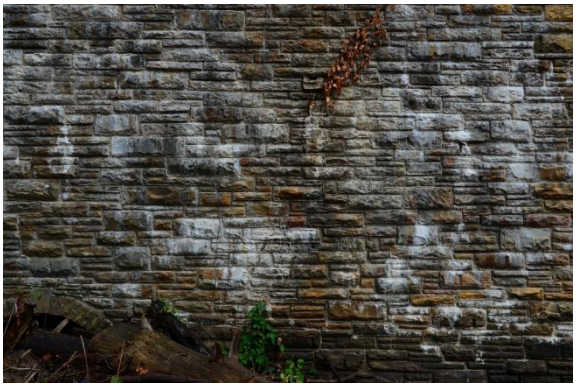
Direct sunlight produces hard shadows.

The early morning sun as compared to the noon time sunlight proves to be an entirely different quality of light and a different degree of shadow. Direct light, when properly used in the early morning or late afternoon can be a great light source.

In the photograph above direct sun was used to illuminate this model. This photo was done for her portfolio in Los Angeles. The angles of the shadows tell us what time of day this photograph was produced. You can see by positioning her properly in the direct harsh light of the sun it is possible to achieve a nice soft portrait feel with this type of light. Take note that the shadows at this time of day are not so dark that they "block up" and create black areas that have no detail present.

Also be aware of the position of the subject in relationship to the sun. This placement is critical to use this type of light in a flattering way.

Diffused Light-



Diffused light is light that is scattered around with no apparent direction to it. Usually there are no apparent shadows. A good source of this type of light is a heavily overcast sky where the sun's rays are totally scattered and lose their directionality. In the image to the right the light appears to be flat and non-directional. This type of lighting condition works great for black and white photography of people, objects, or a scenic. The "lack" of contrast in this lighting situation offers a soft light quality. In this photo the soft diffused light from an overcast sky; flooding the scene with soft beautiful light.

Directional & Diffused Light-

This light appears to come from a defined direction and has soft apparent shadows. This type of light might be sunlight softly glowing through a window during the daytime hours or spot lights reflected off a big while wall on to a subject. The same flood lights passing through some type of diffusion material (bed sheet) provides this directional-diffused light quality. This type of light provides an even, soft illumination while leaving some shadows.

Open Shade-

These two photographs were taken in "open shade", the definition of which is the light that is present in a shaded area on a sunny day. This male portrait was taken on the shaded side of this brick building. The little girls' portrait was taken under the tree cover in a park. Open shade can also be found under a car-port, or anywhere else that is shaded from the sun. Open shade is a different quality of light than then diffused light discussed above. You can see that it still has some directional quality to it; this one showing light coming from one direction and still providing some sculpturing effect of a "dark and light" side to the subject. This creates and keeps some shadow apparent in the image. Much like diffused light it offers a soft illuminated source that works very nicely for portraiture.

Before we move on, let's discuss the "planning" of the above four images. We've talked about the importance of planning our photography sessions and being as ready as possible. Any time we are preparing for a photography session it's absolutely necessary to make a shot list. This helps your model know and understand what they are to do, but more importantly helps you plan your photographs. I will even do a sketch for each idea and show it to my subject as we prepare this shot list.

Make all the necessary equipment and exposure choices before you start to shoot. Think about what you've learned in the previous lessons about shooting in the sun, in the shade, and so on. Preset you camera settings and pre-select your lens.

The goal here is to not be burden with the technical components once you start to shoot your model. Now, of course, you'll do some test exposures to fine-tune your camera settings, but you shouldn't have to do much more than that. This is the time where you concentrate on composition, your models position, and the overall feel of the expressions and mood you are trying to capture.

These are the main categories of available light that we will consider. As you practice more with each type you'll find that certain subject matter and situations work better in one type of light than another.

Our goal is to learn to work with each and find the right usage for each dependant on our personal style and likes.

Practical Application / Study

Reproduce the above three photographs. You can use the same subject for each photo if necessary but it's preferable not to. Find all three of these lighting situations and photograph your subject there. Take the time to make these three portraits usable in your portfolio.

Light Control-

Now that we've explored and studied some different types of light we can find we are next learning to take this available light and control it; making it do what we want. Although we've been trained almost exclusively to shoot outside in what ever light is present we haven't explored many of the other options available to us as photographers.

Light control is a simple and inexpensive technique we can learn to do by simply understanding some of the ways that light can be controlled.

Light can be controlled in different ways:

1) It can be reflected

2) It can be diffused

3) It can be blocked.

In the illustrated photograph below you'll see a photographer using some photography gear around the subject. They are using a diffuser (overhead) and some reflectors as they do a portrait at 12:00 noon; something we had said earlier was taboo!

Light control is the answer. She is creating and manipulating all the light hitting her subject.

Using Diffusers-Pictured to the left is a set designed for outdoor portraiture. Two photo stands hold up a 52" round diffuser to soften the overhead 12:00 noon sun. Pictured to the right is a "5 in1" reflector kit that can be bought at just about any photography store or an online photo retailer. This reflector comes with four reflector surfaces – white, black, silver, and gold. It also serves as a diffuser.

However, the diffuser metal frame becomes the frame for all of the reflector surfaces, so if you want a diffuser AND the reflector you'll need to buy a separate diffuser to put on top.

What most photographers do to create this type of set up is use the diffuser on top and use a different (less expensive) material for the reflector on the side. The reflector can be any large white material such as foam-core or poster board. Either of these larger sized materials can be purchased at any art supply / hobby store like Michaels or Hobby Lobby.

It is enough to use just the overhead diffuser in most cases as it provides a very soft and beautiful light source in the mid day "ugly" sun. The photographer I photographed chooses to use a chair for her subjects to sit on. It is very important that the diffuser be as close to the top of the head of the subject as possible. Also, the subject needs to sit near the rear of the overhead diffuser so that the light coming through in front of them is maximized.

In the photo above the photographer has her model on the set and is directing an additional person to use a reflector and add some additional light on the subject from the right side. Reflectors work like "mirrors" and are easy to learn to use. In this case both of the young girls were getting photographed so the photographer made a photo assistant out of the one not on the set.

The photo to the left is an actual image from the above session Notice the softness and quality of this light. Remember, this was 12:00 noon so it isn't the time of day we should shoot in the direct sun. This technique offers a great solution to shooting mid-day, any day.

These two smaller photographs (above) were test exposure shots from this shoot. For the sake of learning we took one without the overhead diffusion in place, using just the sunlight present. In both images, the skin is exposed properly. Amazing difference! Take note of all of the techniques present in these photographs. This portrait is shot with a 200mm lens at f3.5 for a shallow DOF.

Notice in the background in the top image the weeds and old fence. Now, look at how nice the background is in the finished portrait. Proper use of lens length and F-Stop completely change the background to something that looks great.

When compared (using F-Stops) the small photo on the left has a "ratio" that is not good for this type of portrait. The shadows are not flattering on this type of portrait. The spread between the shadows and highlights is too far.

Here's a different view of the set up, just so it makes sense. Keep in mind the additional reflector being held by the girl on the right is optional, but it does add a nice "pizzazz" to the image. When using this overhead diffusion panel it's necessary to keep it as close to the top of head of your model as possible. Here, in this example, it's about 12 inches above her head.

Remember that the reflector (used on the side) can be any large white reflective material. It doesn't have to be one of the reflector kits purchases from a photography equipment source. Foam-core or poster board work equally well. The reason for the more expensive one is "ease of use and storage" and nothing more. This one folds and fits in the trunk of your car a lot easier than a 3' X 4 ' piece of foam-core or poster board.

Another easy trick to use when shooting in direct sunlight is to simply block the overhead light and create your own shade. In the photo below our photographer has instructed the assistant to hold a piece of foam-core (foam board) over the head of the subject. This simply blocks all the direct sunlight from hitting the subject. Now the photographer is shooting the subject in open shade.

Let's examine the difference between direct sun during the mid-day hours and creating your own open shade to shoot in. The two photographs below illustrate the difference between the two different lighting situations. These were both shot on the set you see above with the foam-core board. The two photographs are identical except for:

1) Blocking the light to create your own "open shade"

2) Changing F-Stops for the change in light intensity.

There is NO retouching, color correcting or manipulation on these two images. They are direct out of the camera. Now, which image would you rather show your customer? When compared side by side there is no doubt which is a better portrait.

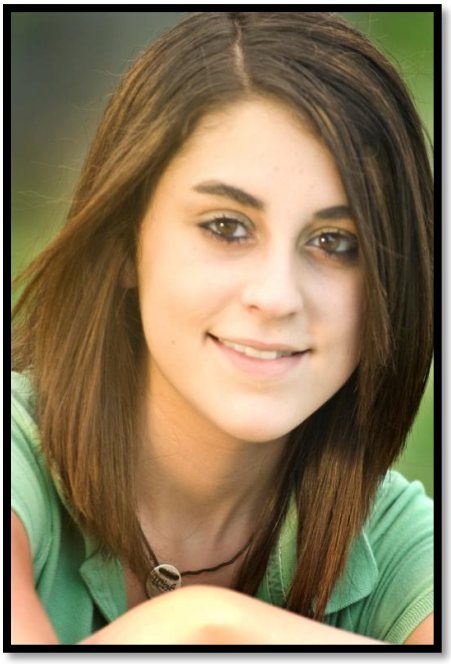
Direct Sun

Open Shade

Ration of Shadow to Highlight to Wide Even Light with no Ration Issues

You will notice a slight change of color being we are switching from direct sunlight to open shade but that's always going to be the case. Open shade tends to be a "cooler" light comparatively. This can be corrected in PhotoShop with a couple of mouse clicks.

There is one other iteration that we need to study that involves using reflectors and open shade. In the photograph below notice all of the setup. The subject is sitting in the open shade of a tree but the assistant holding the reflector is in the direct sunlight reflecting direct sun back on to the subject. This little trick works very well to punch in a little bit of light into the "cooler" shade light to give it the warmer and softer glow of a sunset.



The photograph to the left is one of the images from this specific part of the shoot and you can see the warmth and sunset feel of the mood of the photograph. This technique, although it usually requires two people – photographer and assistant – is a great way to give your photographs a different look than most other portrait photographers. You'd never guess from looking at it that it was executed at 12:30 in the afternoon – middle of the day – on a hot summer afternoon.

Practical Application / Study

1) Create two portraits (different people) shooting in "open shade" with no reflectors. Do this photograph in the shade of a tree or building.

2) Create two portraits shooting in "open shade" you create in a direct sun situation. You'll use a "sun-blocking" overhead panel (foam-core or poster board) to create your OWN open shade. Shoot this with AND without a reflector from the side.

3) Create two portraits using an overhead diffuser in the direct sunlight. Shoot this with AND without a reflector from the side.

Remarks –

D I Y – Any large flat white material will work as a reflector and/or an overhead "light-blocking" device. You don't need to buy the expensive reflector set. This material can be purchased anywhere that sells art supplies.

The diffuser, however, can be a more difficult item to build yourself, although, it's not impossible. Early in my career I built one out of plastic water line pipe and a piece of parachute material purchased at a fabric store. The material needs to be thin so that sunlight can pass through it fairly easily. I think I remember it costing about $20.00 for all of the parts. The reflector kit shown above is around 55.00 if you get a decent one.

There are less expensive ones on the net, but keep in mind they are less expensive for a reason and might not last as long as this better one. Much of the really inexpensive photography gear comes from China, and shipping times can be as long as three weeks.

Remarks from your Instructor –

Thinking like a photographer is a learned behavior and practice. It comes harder to some than others. However, it is ultimately the thing that separates most photographers. Great photographers, as a whole, are simply better thinkers. This results in better execution. If you find yourself doing better planning and more thinking before you pick up your camera then you are starting to think properly about this art. If it's still a struggle then review some of the things in this document so that you can make it seem a more natural progression of thought processes for you.