Your Guide To Digital Photography
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PART ONE: INTRODUCTION

Capturing the Moment and Archiving the Memory

Many of us have fond memories of Christmas morning when we were children. Just as we were opening the gifts Santa left, a parent would enter the room and start snapping photos to make sure the memory lasted forever. We would proudly hold up our new treasures!

Now, our parents were probably not expert photographers, and we certainly weren't professional models. Still, we were able to create some wonderful and memorable photos that really hold a lot of great meaning.

That is why it's essential for you to get started with your digital photography today! You don't need to wait until you can afford the best equipment or until you have read dozens of books and photographed in the field. Anyone can truly become a great photographer with the information you'll find in this home study course. You'll get to the point where you're ready for better equipment later on.

Another reason you might have been waiting to start your career or hobby as a photographer is because you're waiting for the "perfect" event. Well, as a photographer you'll quickly discover that there are perfect moments all around you. Part of what this course is going to do is help you find those moments in everyday life.

Those who have their cameras out will be ready when the
perfect moment does arrive!

It's not the subject of your photo that requires hours of preparation. It's usually an inspired moment that can come and go way too quickly. If you are prepared and observant you'll be able to come away with many amazing photographs.

One such moment of inspiration I've experienced was when a friend's parakeet, Fred, took a birdbath in a glass of water that was sitting on a piano while I was over one day.

The camera was nearby, but I was not quite fast enough to get the shot. With camera in hand, I sighed and said to Fred, "I bet you can't do that again!"

This bit of reverse psychology worked because Fred dutifully replied by taking another dip in the water glass. I was able to capture the moment and it resulted in three great photos.

Subjects like Fred are very rare! If I'd had a digital camera at that point in time, I could have captured many more photos.

Along with the hesitation to have your camera ready at all times, you might not even feel like you're ready to adopt digital photography. You're used to taking photos with film cameras! The good news is that it's easier to make this switch than you think. In fact, there are reasons for using digital and there are reasons for using analog. It's helpful to understand the limitations and perks of both.

**Chapter Summary**

Digital photography is a great way to capture every important moment in your life. There is no need to wait, because it's always a great time to get started with digital photography. You'll be an expert in no time!
Brief Camera History

Before you can fully appreciate the amazing digital technology that is available today, it's helpful to learn about the history of cameras. It's fascinating to see the progression over time!

The use of photographic film was pioneered by George Eastman, who started manufacturing paper film in 1885 before switching to celluloid in 1889. His first camera, which he called the Kodak, was first offered for sale in 1888. It was a very simple box camera with a fixed-focus lens and single shutter speed. It was so moderately priced that it had great mass-appeal.

Since that time, photography has exploded and grown in major proportions. The digital camera is just another step along the road of photography innovations.

Chapter Summary
Cameras have come a long way since George Eastman put his Kodak cameras up for sale.
Analog Vs. Digital Camera Technology

Analog equipment can produce award-winning photographs of publication quality even with a camera that costs under $100. Analog photos have plenty of megapixels for publication quality prints up to poster size (unless they have been scanned under 300 dpi and/or downloaded on the Internet at a lower resolution.)

Digital cameras, on the other hand, are a bit trickier. Unless a camera is over 5 mega pixels it may not be high quality enough to allow it to take publication quality photos. There are many other specifications you have to be aware of as well. For example, the quality of the lens and the size of the sensor are two primary factors that will affect the quality of digital photographs.

Still, you might not be able to afford a $1,000 digital camera to get 8 to 10 mega pixels for publication-ready photos. The good news is that you can still capture outstanding photos despite that, and you can edit them to perfection using your computer.

It's always best to ask a salesperson what they recommend according to your budget and photography goals.

You really can't beat digital cameras for convenience and the ability to take as many photos as you want!

Chapter Summary

Photos that are taken with analog cameras are usually publication quality. Digital cameras that are on the low end of the price bracket usually don't offer the same results.
Still, there are an incredible number of reasons to make the switch to digital. You're bound to find a great camera that's within your budget.

**Different Kinds of Digital Cameras**

If you are not familiar with the modern cameras of today, you'll really appreciate this section that can help you choose the one that's perfect for you.

There are three basic categories that digital cameras fall into:

- Amateur
- Professional-amateur
- Professional

The sizes, quality, and prices of every digital camera can vary depending on your needs and preferences. The camera you end up buying will most likely depend on the function it will serve, who it is for, and the budget you must follow.

If you want to go for professional quality right away, you'll want to get an SLR style digital camera. These cameras are more expensive, but they are usually worth every penny! They have so many features, including: manual controls, manual settings, various shutter speeds, high resolution, and the ability to change lenses.

If you're not quite ready for that jump in price you can certainly work with one of the
middle of the road cameras and get great results as well.

Chapter Summary

The three major groups of digital cameras are amateur, professional-amateur, and professional.

History of Professional Digital Technology at Consumer Prices

Consider the experience of a friend below to help you make your digital camera decision.

2001

In 2001 a friend was seriously considering buying a digital camera because she had a spontaneous opportunity to photograph an unusual and historic building. She didn't have a camera, and certainly not a digital camera! She asked around and discovered that the library would lend her a camera for the day. This was a 2 megapixel digital camera.

It was her first experience with a digital camera, and she was amazed that she could simply upload these photos to her computer, and then to her website. Her photos also printed out beautifully as 8½" X 10" photographs.

She was happy with the experience -- but she learned her lesson a year later. A magazine hired her to do a story on the building, and when she presented them with the photos they let her know how limited they were.

Since she was used to working with analog, it never occurred to her that this low megapixel camera would cause problems. She understood the basic concepts of dots
per inch and dpi, but it wasn't until she zoomed in on the photo that the megapixel problem became even more clear.

She had to return to the building after that to take all new photos for her story. The lesson here is that if you're concerned about quality, you need a more professional camera.

2004 - The Cost of Quality

In about 2004, this same women set out to buy a digital camera again. She was very impressed with the nice photographs that other digital camera owners had shown her.

At this time, a 6.3 mega pixel camera still cost around $2,000. She thought to herself, "If I am going to spend that much money on a camera, I would be more inclined to buy the large format camera I've always wanted to take better photographs of buildings."

The tough part was these cameras were still so darn expensive!

She decided to stick with her old 35mm camera and rent a digital one when she needed it.

Present

These days, there are several excellent 8 to 10 mega pixel cameras on the market for less than $1,000! They have dropped in price to under half of what they were just a few years ago.

It's even better news that the technology you'll use with your digital camera has decreased in price as well. You can find quality equipment for printing for under $200. This was unheard of just a few years ago!

While it's exciting that the costs have dropped so dramatically, it can still be hard to pay that much money for a camera. That's just fine! You can always buy used (think eBay) or wait for a special deal. You also don't need the top of the line camera at this stage.
Which Type is Easiest to Use?

If you have been thinking of buying yourself or someone else a digital camera, there are plenty of choices before you! Digital cameras come in many shapes, sizes, and materials and can vary in price. When it comes to the world of digital photography, it's good to know that you have choices!

Digital photography is so popular among both novice and beginner photographers because of the simplicity it can offer. Gone are the days when you have to carry your film in to a store have it developed!

You also no longer have to wait until you develop the film to see the results of your hard work. With a digital camera, you can immediately see the pictures that you take and if you don’t want to keep any images, you can easily erase and re-shoot that particular shot!

As we discussed earlier, there are many different types of digital cameras on the market, including those for beginners and those for the professional photographers. Some models are completely automatic (point and shoot cameras) and others offer more manual settings (the choice of many professional photographers). Before you make the decision on which camera is best for you, it would be a good idea to learn a little about your options.

With an automatic, point-and-shoot digital camera, you don’t have to worry about knowing how to handle any settings. Everything will pretty much be done for you. The camera will take care of any color balance and focus settings that will need to be used. The only job you will have with an automatic camera is to pick it up and take the picture! As you get more advanced you can tweak the settings and experiment some.
There are tons of features that you have with a professional camera. The more features you have, the more details you can capture in your photographs. With a professional digital camera, also known as an SLR, there are many settings, attachments, lenses and accessories that can be used to make your pictures even better.

If you are not familiar with an SLR style digital camera, don’t feel overwhelmed. There are many resources that are available to help you become more acquainted with your camera and the functions of each of the many features.

When it comes to using a point and shoot digital camera, you must realize that you will not have much control over the camera and the images that it produces.

These digital cameras offer basic features. This means that if you want any control over the settings or anything like that, you may not be looking for an automatic style digital camera.

With a professional digital camera, you can create more interesting photographs. Unlike the point and shoot digital camera, an SLR allows the photographer a lot of control. It may seem frustrating to learn about all of the neat features, like the aperture and lenses, but the time and money you spend on it will be worth it in the end!

The bottom line is that using a digital camera can be as easy or difficult as you make it. If you have a basic point and shoot model, taking a picture should prove quite easy. But whether or not you will be completely happy with that shot is up to you.

The best part of the digital photograph is that you can instantly see the results and if you need to, you can quickly erase a picture and take it over.

If you venture into the world of SLR digital cameras, then you will have a little more work in front of you.

But, if you encounter any problems or features you don’t understand, there are many
resources to make it easy on yourself.

From the user’s manual to computer programs to books, there is no shortage of information about digital SLR cameras!

Whether you want to buy a digital camera for your son’s High School Graduation ceremony, or you want to start your own photography business, you cannot go wrong with a digital style camera! You can spend as little as $50 and as much as thousands of dollars on a digital camera, but with so many models and styles available, finding one that you can easily learn to use at a price you can afford shouldn’t be a problem.

**Chapter Summary**

Point and shoot cameras are a lot easier to use, but they also don't offer very many features. Still, there are some good budget options available. If you want more control over your photos and you have a little more to spend, you'll want to go with an SLR camera.

**AF SLR Model Camera**

These cameras can take a picture that is close to perfect!

The SLR cameras are what the professionals employ, since they work wonders for taking amazing photographs of every kind. Some of the great features include the lens, custom functions, shutter button, LCD panel, film transport, exposure mode dial, Hot-Shoe, and more.
**Zoom In Lens**

The zoom in lens on most of these cameras is great! It makes a huge difference when you're out on the field taking photos.

**Custom Functions**

These functions allow you to personalize the settings to get exactly the kind of picture you want.

**Shutter Button**

The shutter button on these cameras will allow you to take the picture. With an auto-focus camera you can push it in half way to focus, and then all the way to get the shot.
Hot-Shoe

This is where you can mount the flash.

LCD Screen

LCD is short for Liquid Crystal Display. This is where you can see the photos as you take them. It also shows you the menu options.

Exposure Mode Dials

This allows for mode alterations
**Film Transport Selector**

This is a timer where you can snap multiple pictures at a single time, or one picture at a given time.

Your SLR camera will also include things like a viewfinder, input dials, AF assist beams, Diopter connection, integral flash, depth of field preview, auto-focus point selectors and more.

Clearly, you can see why you might want to go with the SLR if you can afford it. These give you the most flexibility. They are also what photography experts usually choose to work with. There are many different styles at different price points, so be sure to explore all of your options. The prices are dropping all the time, and you really can find some great deals!

I recommend selecting a camera that offers some automatic options, but more depth of field and customizable options that your basic point and shoot model.

Once again here are your basic options:

- *Stick with a point and shoot for now, until you get settled in with your digital photography*

- *Buy a semi-pro camera that offers a higher number of mega pixels and more manual options*

- *Buy a professional SLR camera that will give you print quality photos and a completely customizable experience*

You can find these different styles of digital camera quite easily. They are made by most of the leading camera makers in the world. These include Canon, Nikon, Olympus, Minolta, and all the others. These cameras all range in price according to their features. You're sure to find the perfect camera for you with a little research.
Chapter Summary

It's a great idea to go with SLR if you can afford it. If you'd rather start out on a smaller scale, there are some really great middle-of-the-road cameras available.

Will I Need Different Lenses?

Clearly, the trend these days is to go digital rather than analog. More and more people are also turning to the high-market Single Lens Reflex (SLR) cameras for reasons we've discussed above. The market drop in use of large format film cameras and lenses means they are becoming increasingly rare.

There is still one reputable manufacturer that is still producing their flagship film camera and lenses. Most of them don't because the market is just not there!

Let's face it; the increased quality in digital capture and memory capacity has been incredibly alluring for consumers making the switch. Many of the kinks have been ironed out of these digital cameras as well. For instance, it used to be an issue of storing RAW files vs. JPEG files. These days the cameras store both for you!

Digital photos are also a lot easier to edit. That means there is less of a need for different lenses and filters like you have to use with film cameras.

Still, there are times where you'll need a certain lens to get the best result.

The marketplace has a variety of lenses to select from, and all of these lenses have different functions and prices. The Macro, Perspective-Control, Mirror, and Fish-Eye lenses are a few that are offered today. Browse through the search engines and stores to find a wide range of digital photography lenses that will give you a wide selection to choose from as you compare cost and function.

Some of the lenses are described below to give you a head start on making your choice:
**Fish-Eye Lens**

This kind of lens has a 180 degree view lens of the viewable area. You can get the fish-eye in a full-frame version or circular model. This lens is generally 8mm in you get the circular, and 15mm if you get the full-frame.

The circular fish-eye lens will deliver a spherical photo in the center border, while the edges are black in color. The full-frame fills those colors in around the edges.

**Macro Lens**

These lenses can be purchased from 50mm up to 180mm. The higher the lens range, the better the picture!

Most experts will choose the 180mm or the 105mm since it works like a telephoto zoom lens, yet delivers top quality photos at long ranges.

**Perspective-Control Lens**

These are often used by architects! This lens enables the photographer to manipulate his prime focus, while controlling the deepness of the subject in question.

You can use this lens to photograph buildings while correcting any perpendicular focuses that meet. You can capture lengths with this lens starting at 45mm and reaching up to 90mm.
Mirror Lens

These are available in 500mm and 600mm. It has a powerful pull and works well with fixed images. This is the ideal lens for those who are traveling, but need a mirror image view.

12mm Tokina Lens

This lens is designed to meet wide-angle needs, ultra-wide depictions, and superlative wide-angle ranges. It also has a colorful outlook overall. The downside is that it's quite expensive, but the price is well worth it when you reach that point as a photographer.

If you are searching for an expert lens, you want to keep the highest width and zoom in mind. The lower priced lenses often become problematic, which can be a huge hassle when you're trying to capture a great moment.

Other considerations as you choose your lens include:

- Shutter speeds
- Defects
- Aberrations
- Elements
- Zoom
- Speed
- MM
Other common lens types include:

- Fixed
- Zoom
- Wide-Angled
- Standard
- Telephoto
- Super Zooms
- Macro

You may want to also consider getting a Flashgun to produce picture-perfect effects. These include the flash head, diffuser panel, focus assist lamp, test button, hot shoe mount, ready lamp, and control buttons. This helps produce top quality lighting.

A camera can only do so much on its own, so these lenses and accessories are ultra-important!

**Chapter Summary**

While the lenses of the analog days of the past are almost extinct, there are many lenses available for professional level cameras. These are essential as you move along your photography journey.

**Shopping for a Low-End Digital Camera**

There are many situations that demand the highest quality, the finest control, and the most advanced features. Then again, you don't always want to spend $1,000 on a camera. There are also times where you won't want to use your high quality camera, so a less expensive one will do. No one needs to drop a thousand dollar camera into a river while trying to get pictures for a community newsletter!

This is when a low-end digital camera will work just fine.
What is "low end"? There is no real reason to pay over $200 for one of these. They usually have less features and options, and lower quality. Still, you can find cameras made by famous brands like Fugi, Canon, and HP for a lot less than you think.

Despite the fact that it's "okay" to use a lower quality camera sometimes, you never want to go lower than 3 megapixels.

Almost all brand-name low-end cameras have certain features in common with more expensive variants, such as shutter-release, flash fill, and red-eye reduction. If you anticipate the need for close-up photography, choose a camera with “macro mode." Be prepared to work with available light or your own lighting – many low-end cameras disable their flash in macro mode. Even if they don’t you may find that the flash causes more harm than good.

While using Macro Mode, remember that most compact digital cameras (not only the low-end ones) are “range- finder” cameras, meaning that the view through the viewfinder is at a different angle than the final shot. For close-ups, use the LCD display (just about all cameras in this range have one) to frame the picture.

For most of the applications where you would use a low-end camera, you don’t need to change aperture, sensitivity or metering settings away from automatic. That’s good because most low-end cameras won’t let you. You may have to compensate for that (and experiment to get to know the camera’s “automatic rules”).

Almost all low-end cameras use center-weighted metering, so you can use the old trick of using the shutter-release feature while pointing at an object with the desired light level before taking the shot.
There are a lot of different ways to store digital photos in cameras, but almost all low-end cameras worth considering use one of the many memory card formats. There are too many advantages to removable memory to even consider a camera that uses only its own fixed internal memory.

You want to check before purchasing, either with the manufacturer or through an online search, to see if the particular camera you’re looking at has limitations as to card speed or capacity (some cameras can’t read or write to the newest high-capacity multi-gigabyte cards).

Capacity limits are less of a concern for low-end cameras, however, as their lower-resolution pictures take up little space. It doesn’t make sense to spend $200 on a memory card for a $100 camera unless you really need to take 2000 pictures.

You may want to choose your low-end camera as much by what kind of storage cards it uses as by its features, especially if you’re trying to save money. Even if you don’t buy your storage cards on eBay, it can be a great place to compare prices and get an idea which types of cards (and capacities) are currently less expensive.

Most low-end cameras use standard (or rechargeable) AA or AAA batteries, which are inexpensive for casual use and found just about everywhere. Make sure you get the kind that are made specifically for digital cameras, or they'll get eaten up fast!

A very few cameras in this class use 6-volt lithium batteries, which have become fairly common. The lithium batteries reduce the size and weight of the camera.

Obviously, flash usage reduces battery life, but many cameras allow you to turn off the LCD display, which also saves considerable battery life.

**Chapter Summary**

You can definitely find a budget camera to start with. Just be careful that it will have the features you need to capture the quality of photographs you want.
Digital Photography Myths

There are many myths in this world, spread by word-of-mouth, official sources and even just common assumption. It can be difficult to tell which are true and which are not. Some common myths about digital cameras follow:

First is the common myth that X-rays damage memory cards or cameras. Some people go to great lengths to protect their gear on trips, especially from the dreaded airport X-ray machine. This is mostly wasted effort, and can even cause more problems than it solves.

Airport X-rays can’t damage a digital camera or your memory cards.

Your equipment and data are secure. Your only problem is that the wand-type metal detectors used by security to check when the X-ray or walk-through metal detectors indicate a problem may corrupt data on memory cards.

What that means is that carrying cards on your person to avoid sending them through the X-ray machine exposes them to greater risk.

Efforts to protect memory cards with something to block x-rays only flags your luggage for more careful search, possibly exposing the cards to the stronger magnetic field of the hand held wands.

It is commonly believed that cold weather can damage a camera - and it also happens to be true. Condensation can form inside a camera, as it grows cooler, and not just in the lens. Moisture can cause a number of intermittent or permanent problems with the camera’s electronics.
Condensation inside the camera can freeze and cause damage if it is in the cold for too long. Warm the camera up slowly after it’s been out in the cold, but do your best to keep it from getting cold in the first place!

Many cold-weather photographers carry their cameras inside their jacket to keep them from getting cold enough for condensation to form.

Lastly, consider storing the camera in a plastic bag - the condensation will form first on the bag before it forms in the camera.

The next myth is that digital cameras, with fewer moving parts, are somehow more durable than their film cousins. This one is easy to dispel. Digital cameras have as many (if not more) sensitive parts as film cameras. They share their most sensitive assembles, such as lenses.

Digital cameras are often of lighter construction than film cameras. In short, there’s no reason to treat any device roughly. Take care of your tools, and they will take care of you.

It is often said that resolution is the most important factor in image quality. This one is not even close, it’s lenses, hands down. That’s why SLR cameras with removable lenses are so highly valued, and why professionals spend so much more on lenses than on cameras. Even a single high-quality lens can cost more than the camera body.

Poor quality lenses can impose many problems, from blur and distortion to color flaws and darkening of the image edge, that high resolution cannot hope to compensate for. I’d definitely rather have a 6 mega pixel SLR camera than an 8 Mega pixel compact.

I’ve saved the most interesting for last:
“The mega pixel rating is the number of pixels on the camera’s sensor.” Well, yes and no. Your typical camera sensor has a set number of red, green, and blue sensors (twice as many green as either red or blue - a 4 mega pixel camera has 2 million green sensors, 1 million red and 1 million blue), arranged in a pattern similar to the phosphors on your TV screen, known as a Bayer-pattern mosaic.

The camera receives light at those sensors, then averages values and interprets the signal to derive a red, green, blue and brightness value for each pixel. There are more green sensors than red or blue because the human eye is more sensitive to green light than red or blue, and if the brightness information-gathering the camera does is biased toward the green, then the final product will more closely match what the eye saw before the shutter snapped.

The exception to this rule are the famous Sigma cameras that use Foveon sensors that can detect all three colors with each sensor, and thus effectively double the “accuracy” of the final image, as no interpretation is necessary.

**Chapter Summary**

There are many myths out there about digital camera use. Some of them, like the fact that cold weather and condensation can harm cameras, are true. Others are completely false. If you're ever unsure about a feature of your camera or a danger, always do your research to make sure.
Quality and Quantity of Mega Pixels in Digital Photography

The great debate about how many mega pixels a digital camera must have for quality photographs rages on. Of course the answers depend primarily on how large you want your print to be and what the characteristics of the camera's sensor is.

Just like traditional silver-based analog prints, digital photographs begin to pixilate as enlargements increase in size. To get the best use of your camera and investment, it is best to explore the many facets that affect the quality of digital photography.

What is the sensor and how does it affect digital photo quality? No matter how many mega pixels the camera you are looking at may boast, a photograph can still lack field of depth and true colors due to other features you may have overlooked in digital cameras.

What is even worse, you may have splurged on an 8 to 10 mega pixel camera, but not have it set up to optimize performance. On the other hand, if you went for a 4 or 5 mega pixel camera there are features that you may be unaware of that could dramatically affect the quality of your photographs. We want you to get the most out of the camera you choose.

Chapter Summary

You need to understand the different settings your camera has so the quality will be as high as possible.
Vivid Color and Greater Depth of Field

For most photographers, the vastly increased depth of field in digital cameras is good news. Too many pictures taken with our 35 mm cameras are not quite sufficient where they quickly run out of the depth of field. Digital provides a sharp foreground while enjoying details in the distance. This is especially evident in landscape photography. Being able to work with wide apertures (small F-stops) allows us to use higher shutter speeds, thus eliminating another source of image distortion.

The program mode, especially for wide-angle lens settings, clearly favors wide apertures and high shutter speeds. Actually, small apertures, i.e., large F-numbers, may lead to image degradation due to diffraction effects. These factors depend on the actual (as opposed to relative) diameter of the lens aperture, which makes F-stops critical when programming digital cameras. This is one reason digital camera makers limit themselves to F/8 or F/11, but not greater values, although these would be still quite useful in the macro mode.

Chapter Summary

The camera lens, shutter speed, and aperture play important roles in the quality of the photographs you take. They will determine how well you use the mega pixels you have to most accurately document your subjects.
Wider Dynamic Range

Dynamic range is the scale of light tonality from darkest to brightest in an image.

The greater the dynamic range to start the more versatility you have with a photograph in post captures. Cameras at ISO 100 have a dynamic range of about 446:1. That means the digital image captures and delivers an image made from 8.8 stops of brightness. Where you capture a wider dynamic range, you have more to work with.

Digital cameras provide the user the ability to change many camera exposure settings to brighten or lighten a photograph.

Exposure settings such as White Balance, exposure compensation, and saturation are limited in their ability to represent a photograph by the quality of raw capture provided. Many cameras now allow one to capture in RAW and in JPEG to provide one immediate true color representation of JPEG while archiving the maximum amount of material in RAW.

Digital cameras increase our ability to edit more tonal characteristics of RAW files with a variety of sophisticated user-friendly software. A 6 mega pixel camera may have sophisticated lenses and a sensor that provides 35 mm coverage with 8 to 10 megapixel quality. The sensor and lens dramatically affect the capture quality of your camera, megapixel or not.

Chapter Summary

Digital cameras that has a greater dynamic range will give you more options and control over the final look of the photograph.
Digital Cameras Offer Enhanced Control in Final Image Appearance

With digital, there is no need to entrust your cherished photographs to complete strangers or wait to have them developed. In the long run digital saves you money where you don't need to buy rolls of film and pay for development. Your time is valuable. With digital, you don't have to take the time to drop off the film and then pick up your photos.

Digital cameras instantly show you pictures you take at the moment you take them and thus, you have more options and opportunities to get just the exposure you want in the moment that counts.

Chapter Summary
Taking control of the final look of your photos is easy with digital cameras.

PART TWO: BASIC DIGITAL CAMERA USE

Tips for Shooting a Better Digital Picture

Whether you are a novice or a beginner in the world of digital photography, you can never know too much! There is so much information designed to help you take better digital photos that you may feel a little overwhelmed when you shoot pictures. Don’t worry though -- as long as you remember some of the basic techniques for digital photography, you will be well on your way!
The most important factor in taking pictures will be understanding your digital camera and photography in general. If you don’t know how it works, you can’t get the best out of it, right? If you take a little time to familiarize yourself with your digital camera, your pictures will tell a different tale.

Having the very best camera on the market will not matter if you don’t know how to use it. Learn about your camera by reading the user’s manual, but also by just using it. The more you use your camera, the more comfortable you are going to feel with it.

Because many of the new digital cameras offer different modes for shooting, familiarizing yourself with it will make a huge difference in the quality of photos that you produce.

Make sure that your camera is capable of holding the amount of storage that you need. If you are a professional photographer, taking numerous pictures on a daily basis, you will probably need quite a bit of memory space. If you are someone who uses the camera only on special occasions, you are not going to need quite so much memory on your camera.

How many mega pixels should your digital camera have? You will need to use your own judgment, but if you are a professional, a camera with an 8 megapixel size and up is a good place to start. For those who are not professional photographers, anything from a 3 megapixel and up should be good enough for you.

Another key aspect for taking great digital pictures is to hold the camera still.

If you are trying to take a picture and your hand moves at the wrong time, then the picture will not turn out the way you had planned! A tripod is a good and inexpensive investment to make to add stability to your picture taking.
Chapter Summary

Learning as much as you can about your camera is important. This home study course, your camera's manual, and good old fashioned practice are the best ways to learn.

Getting to Know Your Digital Camera

As with anything you are learning, you will feel more comfortable if you understand what you are studying. While you don't need to know exactly how your new digital camera works, you do need to know the basics.

However, if you are not really informed about some of the inner workings, you may not purchase exactly what you need. Put simply, the more you know, the better your pictures are going to end up!

Digital Zoom

There is something called a “Digital Zoom” that you will most likely need to become familiar with. The digital zoom differs from the “Optical Zoom”, in that it electronically makes pixels in the middle of your picture appear larger. Basically, this function takes a small part of the picture and enlarges that piece, instead of the entire photo.

If you are trying to focus on the whole picture and make the whole picture larger, then the “Optical Zoom” function is what you need to use. If you want to focus on an image in the middle of the picture, and let the rest of the picture appear less in focus, then the “Digital Zoom” function is what you will want to use.
Pixel

A “Pixel” is what each photograph you take is made up of. If you look closely at a picture, it is made up of tiny dots, known as the “pixel”. A “megapixel” is term that you will hear and see very often in the world of digital photography.

It refers to the highest resolution possible that a given digital camera offers a consumer. “Mega” means millions, so if you have a camera with a 5-megapixel resolution, your camera uses 5 million pixels an image. The more pixels a camera uses, the higher quality each photo will produce.

ISO

You will see and hear about a term called the “ISO”. This is an abbreviation for the International Standards Organization. This is the organization that sets the bar for photography.

In terms of the ISO of your digital camera, it is talking about how sensitive your camera is to lighting. You need to know that the higher the ISO on a camera, the better for darker conditions. The lower the ISO, the better suited this camera will be in lighted conditions.

Shutter Lag

If you stumble across the term “Shutter Lag”, this is referring to the time it takes between pressing the button for a picture and the time it gets taken. Sometimes, the picture seems to take a pause in that time, and that is because of the shutter lag. You really only need to worry about this if you expect to be taking pictures of things that need a quicker or slower response time.

For instance, you may want a faster shutter speed for action type pictures. If you are
taking pictures of sleeping babies, it probably won’t matter if there is a lapse in time. It is important that you ask questions about the camera you are buying.

Most digital camera makers don’t list the shutter speed of a camera. The best way to find out is to test it yourself, before you buy the camera. Also, many digital cameras have different “modes” of shooting, so that is a good way to control the shutter speed for many different conditions. If you need a versatile camera, get one that offers modes of shooting, instead of just manual.

Focal Length

You will want to get familiar with a term called the “Focal Length”. This term explains just how far out a shot can be taken, and still be in focus. There are a couple of different categories of focal lengths, including telephoto (perfect narrow sized photos) and wide-angle (best for wider shots).

It is noted that most of the digital cameras are built with telephoto lenses, and not the wide-angle. If you are looking to take pictures of wide spaces, then you may need an additional lens.

The three main focal lengths are:

- **Wide Angle** - less than 50mm
- **Normal** – 50mm
- **Telephoto** - greater than 50mm
Not sure which lens you would use? A general rule of thumb to go by is that if you are taking pictures of large groups of people or wide nature shots, the wide-angle is what you will need. As you become more experienced, you'll start to learn when the right time to use each lens is.

**Metering**

The metering system on your camera is also very useful. It measures how much light is in a scene and calculates the exposure that will work best. To make this work, you just need to choose the metering mode and the camera will do the rest for you!

If your camera does not offer metering mode selection, it will may default to center weighted average metering. It takes the average exposure of the whole frame, while focusing on the center.

There is also overall metering. This is when the camera considers everything in the frame.

Spot metering really focuses in on the center. The rest of the frame is taken out of the equation. An example use for this setting is when you're taking macro shots.

While this might sound confusing -- it's really not! Basically the metering just looks at all the light in the scene and figures out how to make it look best. No one likes looking at shots that are overexposed, and now you (usually) don't have to worry about it!

**Sharpness**

If your images are all fuzzy, they're not going to look as good as they could.

There are a few different reasons why this might happen. First of all, make sure your camera is in focus. You might be focusing on the wrong area of the subject, or you might be too close to your subject.
Another reason you might be seeing some blur is if your subject is moving too quickly. You can capture fast moving objects, but they will turn out blurry if your shutter speed is too slow.

Yet another reason your images aren't sharp is if you're moving the camera around when you take the shot. Try using a tripod, or finding a way to steady your hand. There are cameras that correct this shakiness for you as well.

Finally, you might be dealing with "noise" in your photograph. This happens when they are over-pixelated. These tiny dots can definitely cause your photos to lose their sharp look.

You'll notice that shutter speed is mentioned in helping increase the sharpness of your photos.

Here are some general guidelines so you can make sure your camera is set properly:

- **Set your speed higher than 1/60th of a second if your lens is 50mm**
- **Set your speed faster than 1/125th of a second if your lens is 100mm**
- **Set your speed faster than 1/250th of a second if your lens is 200mm**

You should also pay close attention to your aperture. The smaller your aperture, the longer your shutter speed should be.

Your ISO can create noise in your photographs as well. If you choose a larger ISO you'll be able to increase your shutter speed and select a smaller aperture. For ultra-sharp photos you will want to keep your ISO low.
Contrast

Contrast is another thing that is necessary to pay attention to when you're taking photographs. This is basically the differences between tones in an image. These days it's very easy to change the contrast after you have taken the photo by using software like Photoshop.

Unfortunately, it's not that easy to manipulate the contrast when you're out on the field. You can use certain filters, but it's often easier to use the software.

You'll want to pay close attention to what is called dynamic range. Things like clouds in the sky do not have a lot of dynamic range, so they are not as likely to have high contrast.

Filters will not help much in this case. One trick is to expose your subject and then expose the background. Then, you can blend the two and add contrast in a program like Photoshop.

Don't fret too much about contrast, because it really is easiest to make it right after the fact.

Framing

Framing is what you do to make sure people's attention lands right on the subject of your image when they view your photo. You use what is in the scene to cover the parts that are not important to the goal of your photo.

This is really cool for several different reasons. First, it adds a new "spin" to the photo. These background elements can be the perfect frame for your subject. It can also add depth to your photo. Photos that don't have depth can sometimes be boring! Framing adds a whole new level of interest.
Basically, you need to work on your framing because it is what will draw people in to your photo. Be very careful that what you choose to frame doesn't have the opposite effect! Sometimes what you think will be a nice frame suddenly just adds clutter.

With some practice, you'll be able to find those background elements that will compliment the subject and draw your reader in to experience the photo rather than just view it.

**Chapter Summary**

Understanding the various terms and aspects that surround digital photography is very important! It will become like second nature in time, but for now it helps to read what you can and connect the terms with your digital camera experiences. Focal length, framing, contrast, sharpness, metering, shutter lag, ISO, and pixel are all very important.

**Taking Photos in Different Situations**

Now we get to the fun part! It's wonderful to be able to explore your digital camera in many different situations. It's important to know that the settings and strategies you use for one type of photo might be drastically different from those you'd use on another type of photo.

We're going to cover:

- **Pets**
- **Night Time**
- **Outdoors**
• **Group shots**

• **Self-portraits**

• **Kids**

• **Travel**

• **Weddings**

• **Sports**

Don't worry if you don't get the strategies down pat the first time, because as you gain more experience you'll start to find that you know exactly what to do when that picture perfect moment arises.

**Taking Photos of Your Pets**

There is nothing like the convenience of having a digital camera around when you see your furry little friends doing something cute! If you like to share your photos, this makes it even better because they are incredibly easy to download, store, and even send them anywhere in the world. It is pretty easy to use a digital camera, and with a few simple tips and techniques, you can really capture the best images of your pets.

First of all, you should really give a little thought into your lighting conditions. If you’re able to take advantage of any natural lighting condition, then it is really a good idea to do so. If you have pets, you know that the flash of the camera can have some pretty adverse reactions, so it is best to stay away from this as often and much as possible.
Try to stay out of the direct sunlight, like maybe have your back to the sunlight that is streaming in from the window, or close the shades/blinds for the picture.

Lighting is the number one cause of the red-eye effect, so you just need to give a little thought to it before you snap the picture.

Next, just like when taking pictures of kids, it is always a good idea to get down to their level when shooting the photo. You really don’t want it to look like you are on a ski slope, or are looking way up at them, so it is best to be as level with them as possible. You probably don’t want Fido to be distracted, so just use your best judgment in this situation. Sometimes, you may have to lie all the way on your belly for a pet, or if it is a bird or something like that, you may be lucky enough to be able to stand or sit.

Once you have gotten the first two steps down, the next thing to do is to make sure that you have a good focal point. One of the more common places to focus when shooting pet pictures is the eye. You will want to lock in the auto focus, so when you get the camera at a place where you have the eyes in focus, just lightly press down on the button. (This button actually has a technical name; it is called the shutter release, just in case you ever hear it referred to as such.)

It’s important to focus on an animal’s eyes because wherever you focus, the rest of the photo may appear a little blurry, but the focal point will not. So, if you focus on the feet or legs, your animal’s eyes will not appear as sharply defined, as you may prefer.

Another good thing to remember when taking pictures of your animals is that you can control the action in the picture, if you want to. In most of the digital cameras you will find, you can control the action. Basically the camera will have different “modes” that allow you to have a little more control over what your camera does.
Most of the time, you will probably have the manual mode in place, but if you decide that you want to play around with the outcome of the picture a little, you can switch the modes. To control the action speed, or stop it completely, you will need to have a fast shutter speed. You can obtain this by switching to an action type mode.

Using a digital camera is a great way to take pictures, especially of your pets and other animals! It is convenient, easy to use and allows you to see what you are doing. If you don’t like a shot you have taken, you can just erase it and do it over!

That is a luxury that no film camera offers. You can do away with expensive film processing and see the results as soon as you take the photo. You never know what your animal will do next, so it’s a good idea to keep these few tips in your mind when you want to take their picture, they will come in very handy.

Chapter Summary

Pets are make great photography subjects but there really are some special considerations you have to take with them. For instance, paying close attention to the modes of your camera that capture motion are important. You'll also need to know how to get down on your pet's level for the best results.

Taking a Better Night Picture

Who doesn’t love the night sky? Whether you are admiring the stars or a really cool array of light, there are probably many night pictures that have been burned into your mind, right? Well, why not capture them on film? If you have been intimidated by night photography, or have failed at it in the past, there are a few simple tips that can help you take better nighttime photos.

First of all, it is always a good idea to know when you should and shouldn’t attempt to take a nighttime picture. That way you won’t get so frustrated and waste your time! Some of the most beautiful photographs are taken at dusk.
You will notice some really stunning natural lighting colors available at this time, as opposed to completely dark. You should take a little time to check out the weather and know ahead of time what you may encounter that evening.

If there is a chance of rain and it is cloudy, you won’t have much time to capture the stars, if any at all! Also, the location of your shoot is important. If it’s possible to get out of the city, you will be able to capture better pictures.

Exposure is the most important aspect, aside from weather, when taking a night photo. You need to use a longer exposure time for the night pictures. This will allow as much natural light through to the picture as possible.

If you want to capture incredible details and use less flash, then using a longer exposure time is the only way to go. If you are going to use a long exposure make sure that you use a tripod, as any movement at all during the picture will cause the picture to become blurred.

Also, you can capture some pretty cool effects, like car lights or street lights, when using a longer exposure.

You will want to make sure that you know how to use and when to use your flash when taking a night picture, too. Most of the time, you probably will not even want to use your flash. If you are taking a picture of an object, like a person, you will want to use your flash. When taking pictures of the night skyline, it is best to use a long exposure and take advantage of the natural lighting conditions.

If you decide to take pictures at night, you will want to be able to control the photo as much as possible. Basically, you would take a shot of the area you want in your picture. Then, you take a picture of that same shot with the lens cap on.

The reason for this is that some of the pixels in the picture will not be visually good at
night. When you take the picture with the lenses cap on, you will be recording the pixels again while they are hot in your camera’s memory. You can then use those pixels to repair the bad ones in the photo with a photo editor. (If you don’t happen to have a photo editor, you can download one for free by searching on the Internet.)

This may seem a bit overwhelming, but just follow the steps and the instructions on the editor and you will be all set!

In general, it is very hard to take a great night shot, unless you learn to use long exposures. This will allow your camera to use a longer shutter speed and really take in all of the natural lighting that is available. Remember to use a tripod so that your camera remains still during the photograph!

Night photos can be extremely beautiful, but very challenging to take. Just like many other parts of life, if you practice you will get better and more natural at it. The beauty of digital photography is that if you don’t like a shot, you can just erase it and do it over, without having to develop the film and wait another day to retake the photo!

Many people find delight in the daylight hours, enjoying sunlight, people walking and so on. However, some of us see more attractions during the night hours, and few of us will bring those attractions to attention through digital photography. Some of the best pictures taken were during the night hours, especially when the lighting is in check.

Imagine what a large city looks like during daylight hours. You will mostly see an enormous amount of grey buildings, yet other colored buildings may stand out. Now, imagine the same area in the night hours. All these dull grey buildings have turned into a colorful setting.

You see the colors purple coming from the sky, which is your background setting. There are loads of buildings with yellowish lights beaming off the focal point, black scenery is coming from few of the buildings, white specks captures the entire surrounding, green, red, and other colors sprinkle
throughout the area. Image that, one dull grey picture turning to a colorful delight!

In comparison imagine what a chapel would look like in daylight hours and then snap a shot during the night hours. You will have what would have been yellow/white in this example turn into brilliant green, reddish/white foreground, yellowish offset, golden overhead and so forth. What a beauty! If you could only see the difference in digital photo, imagine your surprise. This is a photo known as a traffic trail shot.

Now we come to what it takes to become a night photographer. Night photographers require different types of equipment. They also need a different talent that most other photographers have. The concept of night photography is to capture a feeling, or a mood in the scene. The nightlife photography is a special ability to spot the right area and moment. It is more of a challenge, since a unique skill and experience is involved.

Many photographers in nightlife shoots will take pictures of suburban areas, since it seems to have more to offer. Some of the best shots are taken of buildings with floodlights.

Neon signs often give off a great image. If you are shooting scenes of suburban areas, you may want to capture flowing rivers, lakes and the like in the background. Some of the best scenes also occur as the sun is going down.

I remember a moment when the sun turned bright orange and darkened slightly. What a neat capture!

You will need as for equipment a tripod, torch, remote release, and proper clothing. The
torch can help you to see in completely dark areas. As for camera shots it depends on the mood and surrounding, but many photographers in the night industry will capture scenes in a still moment, by keeping their shutters open, since exposure is one of the prime focus. You will also need a camera that has will flash automatically. You want to take optimum sharp photos, therefore study your aperture setting, lighting, effects, and when to turn off the flash.

You will also need to learn backdrop talents, since it will deliver a higher quality result. Also, don’t forget that editing programs are available if you need to crop, layer, saturate, and so forth. Some of the best programs can work wonders with less than satisfied photos.

**Chapter Summary**

Weather and exposure are the two most important factors when it comes to night photography. When you learn the basics of shooting at night, you'll be amazed at the images you are able to produce.

**Outdoor Shots**

Shooting outdoor portraits is incredibly rewarding. Not only do you get to be out in nature, but you're capturing the beauty of the world and the objects in it. You really can get some of your best shots outdoors! There are some things you need to keep in mind as you take outdoor photographs.

First of all, you need to know exactly what (or who) your subject is. That way you can compose the picture in a way that will compliment your subject rather than detract from it. Also, consider shooting different angles to make the photo really outstanding.
An important part of knowing what your subject is requires you to plan your background as well. Make sure you don't choose something that is so busy it takes away from the meaning of the picture! As you look through your viewfinder at your subject, take a moment to make sure what surrounds them is really what you want.

It's also very important to watch your lighting. It can be difficult to take pictures on a sunny day, but it's not impossible either. You just need to watch where the light is falling and how bright it is. Some people just move into a shaded area to make sure the sun isn't too bright, but you have to make sure those rays aren't poking through the leaves or you'll end up with bright spots in your picture!

Be careful not to take portrait shots where the sun is shining directly in the person's face. This will cause squinting and the picture will just not turn out the way you want it to.

If you're taking outdoor portraits you'll want to use a long focal length lens. This will help cut out some unnecessary background. Generally, you'll want something that is over 75mm.

**Chapter Summary**

Outdoor photos can turn out great, but you need to plan ahead. Pay close attention to your backgrounds as there are some great opportunities, but some of them can become distracting. Direct sunlight can make or break a photo, so experiment and find ways to get out of the sun when it's too bright.
Group Shots

There are many wonderful reasons why you might want to take group shots. They are also one of the most challenging kinds of pictures you can take! It's hard to get everyone in the shot on the same page, and it always seems like someone "messes it up."

The best way to prevent the most problems with group photos is to plan ahead of time. You should plan who goes where, what the background should be, and which poses will look best. It's not enough to plan this in your head, however. You need to clearly communicate these plans with the people in the group. That way there will be no confusion as to what is best.

Despite careful planning, you might find that the photo doesn't turn out exactly like you had planned. That's why it's always best to take many shots. That way you can have your pick of which one you think looks best. Digital cameras make this so easy because you don't have to worry about wasting film. An easy way to do this is to set your camera into continuous shooting mode.

Another tip is to get as close as you can. Sure, it's tough to get everyone in, but the closer you are the better it looks. If you're finding it way to hard to get everyone in the frame you should consider standing on something to get a higher view. This definitely solves your problem and you're likely to get some great shots.

Chapter Summary

Group shots present a unique problem as you're dealing with different personalities and situations. Planning ahead is the best strategy.
Self-Portraits

Self-portraits are a lot of fun, but they can also be very challenging! One of the most difficult aspects is trying to get yourself into focus. A good way to avoid this problem is to autofocus to make sure it looks right, then switch to a manual focus mode to ensure the camera doesn't switch things up when you go to take the picture.

Another thing to keep in mind is that self portraits are generally close up. Choose a smaller aperture to create a wider depth of field so that it's easier to focus.

How do you know it's in focus and positioned correctly? The easiest way to do this is to put an object where you'll be while you work on composition and focus! A teddy bear makes a great place holder so you don't have to guess.

Finally, a top-secret tip is to put a mirror right behind the camera display. That way you'll be able to see what the photo looks like before it is even taken!

Chapter Summary

Many people avoid taking self-portraits because they think it will be too hard. Tricks like using a mirror to see and focusing on a teddy bear first made it easier than eve.
Kids

Kids are a lot of fun to photograph, but they are often little wiggle-worms! One of the biggest problems you'll come across with kids is blur. They move around so much that it's hard to capture the perfect moments you crave.

It's important to make sure you have a high ISO in this case. This will make your camera more sensitive to light and increase shutter speed.

Sometimes no amount of camera tricks will help that picture shine. In this case you'll want to try and help your child focus. Give them something to examine or play with. Of course, this works best with the younger set that is easily distracted.

You can also place a fun or funny object near the camera itself. Getting kids to laugh and look happy is half the battle since they'd rather be doing something else.

Don't forget that some of the best pictures are spontaneous. It's okay if some of them are blurry because digital cameras make is so that you don't have to worry about wasting film.

Chapter Summary

Kids can be wiggly, so you need to have some special tricks up your sleeve to capture the best photos. Tune in to their playful side to keep their attention!
Travel

Travel is tricky because you might not want to take your most expensive camera. You're always on the go and seeing new sights and you never know what might happen. Still, you will want to bring some kind of camera (even the one you prize the most!) because the experiences you have while traveling should last a lifetime.

The first thing you need to do is plan for everything you will need. You may want to bring extra batteries and memory cards. If you will want to send them to friends and family members while you're on the road you should make sure you have the cables that are required to upload the images to a computer.

Probably the best tip for taking great photos while traveling is to make sure you have a variety of lenses. You can experiment with different shots this way, and you're sure to come out with some amazing photographs.

Also, don't take the same old boring photos that every other tourist is taking. You want to experiment with macro shots, different angles, and different subjects. Thinking outside the box will ensure that your photos reflect the amazing time you had.

Chapter Summary

Travel photography is great, but it's important to not make "touristy" mistakes. Use this as an opportunity to really explore your photography skills using different angles and styles.
## Weddings

Photographing at weddings is one of the most important experiences you'll have as a photographer. You're going to document the journey of two people in love, and help their memories last a lifetime. Making sure you've got your "stuff" together in advance is the best thing you can do to make sure everything goes smoothly.

Typically, you'll want to interview the couple to see what shots are on their must-have list. As you go through the interview you can interject your suggestions as well. After you've talked it over you should make a shot list. This is something you can take with you on that day to make sure you have taken every important shot that's on the list.

In addition the shot list you also need to have a look at the location as part of your preparations. Every location is different, and being prepared means that you can think about the best background and foreground objects. Examine the lighting as well. Churches often have very low light, and some don't allow you to use flash. In that case you can use a wide aperture and increase the ISO. Experiment in advance with flash diffusers and reflectors.

You'll want to make sure you get some spontaneous moments too! The reception is a great place to do this. Again, experiment with different angles and use framing techniques to get the most out of these shots.

You absolutely must remember to take macro shots! This is the perfect occasion to grab those tiny details. Shoot the flowers, rings, ribbons, lace, table settings, and more. Brides and grooms love to look back on these as a great memory of the day.
Chapter Summary

Weddings are extremely special events, so they require some special care and planning. Make a list of shots beforehand, and make sure to get both posed and candid shots.

Sporting Events

Taking photos at sporting events is a lot of fun, and the results can really be fantastic! The problem is that it can take a while for the camera to actually take the picture. This is very common with standard point and shoots and is referred to as the shutter lag.

While it's best to make sure your camera has a very low shutter lag, there are some things you can do to lessen the problem no matter what your digital camera is like. The first step is to always be prepared. If you think something great is about to happen, go ahead and get ready. Right beforehand, press the shutter down halfway to get the focus prepared. Finally, push down all the way at the perfect moment and you'll be thrilled with the results.

Many cameras have an action shutting mode as well. This automatic setting will help you take better sports photographs. Burst mode is great too, as it takes several photos in succession. This can turn out like a flip book later!

It's also important to learn how to pan. Panning is when you move the camera in the same direction as your subject. This can create a really neat effect where your subject is in focus, and the background is blurred. If you've ever seen a photo where it looked like the person was moving in action, this is likely want the photographer did.
To do this, start panning, track your subject and actively turn your body to follow him, then take the picture as you continue to move the camera.

Experiment, have fun, and capture the moments of the day!

**Chapter Summary**

Panning and burst mode are essential for great looking sports photography.

**Preventing Red Eye**

This tip is last, since it really applies to many of the situations above. When you're taking photographs of people or animals, red eye is a huge problem! It happens when the light from the flash of your camera bounces off the persons eye and into the lens of the camera. Since eyes contain red blood vessels, that is the color the light appears.

The good news is that it's fairly easy to prevent, and even to get rid of it after the fact. The first thing you'll want to do is check to see if your camera has an automatic function to reduce red eye. Many of them do an okay job, but it's often not enough.

You can turn on room lights or place your subject near natural lighting. This will make it so that the flash is not so harsh on their eyes, opening the pupil and causing red eye.

If you try these tactics and your subject still ends up with red eye, it is easy enough to fix in a photo editor. There are tools in programs like Photoshop that will get rid of the problem with a few mouse clicks. Don't fret over red eye!
Chapter Summary

You can get rid of red eye using the automated setting on your camera, sticking to natural light and letting the eyes adjust, or editing the photo after the fact.

Tips and Tricks: Horizons and Sunglasses

In the world of digital photography, there’s always something new to learn (and people are always coming up with the most amazing tricks). Some are solutions to problems as old as the art; others are just clever new ways to make the product better.

One of the classic “tricky shots” people encounter is the horizon. It can be maddeningly difficult to line up flat surfaces properly in a hand-held shot, or even on a tripod. The interpreting algorithms in a digital camera’s software can make that even more difficult by “un-straightening” the horizon for you!

Try taking a few versions of a favorite horizon shot at slightly different angles. This is another reason to shoot as high resolution (and with as little compression) as possible; photo-editing software often has the capability to rotate a picture in 1-degree increments, or even less. Unfortunately, this will result in “blanks” at the corners of the shot that you will have to crop out, reducing the resolution of the final image.

It’s also a good idea (especially if you take a lot of shots like horizons or reflections on water) to frame a little bigger than you want to: imagine the inner three-quarters or so of your shot will be the final picture, because after fine rotation and editing, you may have shaved that much off.

On the subject of resolution, higher is better, right up until you run out of memory. You can always lose resolution during editing, but you can never add it. It’s trivially easy to shrink that 6-megapixel image for sending in an e-mail, so shoot it at maximum resolution - you’ll thank me every time you have to crop an image for content, composition or other reasons and the result is still sharp enough to use.
I’ve mentioned tripods once already - if you don’t have one and use one, you’re not taking advantage of what your camera can really do. From those tricky horizon shots to low-light photography, the stability provided by a tripod is essential to get the best shot. There are big, heavy, expensive professional tripods that can stand up to wind but are a beat to carry. There are high-tech carbon-fiber tripods that fold up to fit in your pocket or be strapped to a tree branch.

Personally, I like the cheap collapsible tripods that you can find at bargain stores for less than $15. They fold up and can fit in your back pocket or camera bag, and you can make your own strap from Velcro or a bungee cord to hold your mounted camera to a branch or fence post. Best of all, if it’s damaged or lost, you didn’t lose a sizable investment. At this price, it’s almost silly not to have one!

The more you experiment with your camera, the better. Even inexpensive cameras will generally let you have control over some useful features, like white balance. This adjustment lets you adjust the “temperature” of the CCD sensor, to emphasize different colors.

Changing from the automatic or default setting to the “cloudy day” setting will enhance reds and yellows, which can make objects in those colors look brighter and draw more attention. Try taking the same shot with different settings to compare.

One thing many low-to-midrange digital cameras lack is the ability to use filters. Or do they? There’s no reason a filter can’t be held in front of the lens of a compact digital camera, and you can even use sunglasses to provide filtering effects, and some of them can be pretty interesting.

Polarizing sunglasses can provide the same effect for the camera as they do for your eyes, reducing glare and reflections. Sunglasses can
also alter color balance and filter out certain colors, and can even be used to compensate for the washing-out of light areas that can occur when using slow shutter speeds to capture motion blur.

You should be careful what you use for a filter, and always take an unfiltered shot for comparison. Sunglasses in particular can have flaws, scratches, dust or uneven coatings that may not be easily visible until you start working on the image you just imported to your computer.

Chapter Summary
Taking shots of the horizon can be difficult because it's hard to get the angles just right. Thankfully, there are some things you can do to fix the problem for editing later. Another tip for better photos has to do with using filters. Polarizing sunglasses are great to experiment with!

PART THREE: WHAT TO DO WITH YOUR DIGITAL PHOTOS

Digital Photography Storage Mediums

Whether you like it or not, if you are dealing with images, you will need data discs, memory cards, card readers, adaptors, and the like. Memory cards are handy extras. Cameras often have memory chips or cards available with the purchase, and the size of the memory cards has increased greatly in just the last few years. Eventually, though, your cards will fill up with pictures, and you’ll need to find a more permanent place to store them. The higher the resolution on your camera, the larger the picture size is on your memory card.
If you take loads of pictures, be sure to check your manual to see what size the camera photos overall results are. This will help you to determine the amount of memory you will need, just don’t forget compression. Also, many of the cameras on the market today tell you in the display approximately how many more pictures you can take on your card.

Computer Storage

These days, computers come with an abundance of storage. Most computers on the market today have at least 60 gigabytes of storage, so storing your pictures on your computer is a much more permanent solution than keeping them on the memory card in your camera. From there, you can put them on DVDs or CDs to free up space on your computer if you wish.

Computer Cards

The older model cameras may permit storage of images onto a PC card. You will need to refer to your manual to learn about compatibilities, formats and the like before buying PC cards.

Smart Media

The Smart Media Cards is dissimilar from a Compact card. The Smart Cards are more compatible with the newer cameras, yet you need to check for compatibility. These cards resemble the 5 ¼ Flops.
Compact Flash Cards

Compact Flash Cards are available in sizes up to several gigabytes, and the price has come down dramatically over the last few years.

Removable Storage

Removable storage mediums are available also, which includes drives that attach to your computer through a USB connection. These are fabulous storage mediums, which I seem to like personally over all others. Lexar Media and many other brands provide removable drives.

(More detailed descriptions of storage mediums are available in the advanced section)

Chapter Summary

There are many different ways to store your digital photos. Some of these include computer storage, computer cards, smart media, and compact flash cards.

Sharing Your Digital Pictures

If you are a picture-taking nut, then you probably love to share your work with others. When it comes to sharing digital pictures, there is nothing easier!

Whether you have just taken another great picture of the new baby, or you have recently found an old photo that you know someone else would love, you can quickly
share it with others. There are many ways to share a digital photo and there are just as many great reasons why you should!

Why would you want to store your digital photos onto a CD or DVD? So that you can have them anytime you want, and so that you can print copies that you may need in the future. You can quickly slide the CD or DVD into a computer or any player you may have lying around.

You can view the CD or DVD as a kind of slide show, if you want, and everyone can look at it at the same time; no more waiting to pass the pictures from person to person this way! You can also conveniently and effortlessly copy the CD’s for anyone you want, if you have a CD or DVD burner, which are not really very expensive.

Probably the easiest and most popular method of sharing a digital photo is to print it out. You can either print it out yourself, on your own printer and paper at home, or you can have a professional do it for you. In either case, you will need to store the images onto a CD or DVD and use that to print out your copies. (It’s a little like when you have regular file processed, in the fact that the hard copy of your pictures will be used to pick out the photos you would like to print out.)

You will then pick out the photo(s) you want to print and they will be printed out onto a glossy photo paper. It’s easy as pie and very inexpensive, especially if you can do it at home!
If you are comfortable with using your computer and the Internet, you can also send your pictures with an email. This is a quick and convenient alternative to the old “snail mail” way to send mail to another person.

The recipients can also print them out; if they decide they would like to, or use them as a wallpaper background for their computer. You can learn to download the photo and send it right on the Internet, and your computer’s user manual should also have a section explaining it. It is not hard to learn, so don’t let the technology overwhelm and intimidate you.

You could also choose to place the pictures onto your own business or professional website. This way, you can just direct people to the website instead of sending out a bunch of emails! It’s a really great way to be able to share many pictures with a lot of people all at the same time. They won’t have to wait for their turn and can pick and choose what it is they want to see.

If you don’t already have a website, or don’t have a clue as to where to begin making one, there are a lot of really good resources on the Internet that will help you out. Many sites will charge a small fee, but will set it all up and run it for you, that way all you need to worry about is taking those pictures!

When it comes to sharing your prized digital pictures, you don’t have to get in your car and drive across town to do it! The Internet is the perfect way to share the pictures with many people, very quickly! You can also store the pictures and email them. If you prefer the old school method, just download the photos onto a CD or DVD and print out the ones that you would like to share. Then you can mail those out, too!

**Chapter Summary**

It's easier than ever to share photos with loves ones. You can e-mail them, put them on CD, and even put them up on a website.
Printing Your Digital Pictures

If you want to skip the middleman at the store and print out your own digital photographs, you can! It may seem a bit overwhelming, but just about anyone can get the hang of it pretty easily. With the proper equipment and knowledge, you can print out your own pictures and save yourself a little money in the process!

If you don’t already know, here is a very good piece of advice: take good pictures to begin with! With a digital camera, it is very easy to see the progress of your photos as you take them. If an image is not attractive to you, just erase it and then start over! You won’t have to develop any picture that you don’t like, either. With a digital camera, you can pick and choose which images you want to reproduce, so you have the freedom to make the editing process as painless as possible. If something doesn’t look right to you, just erase it and do it all over again.

The second thing to keep in mind is that the more mega pixels your digital camera possesses, the higher resolution your pictures will have. This means, if your camera has more pixels, the images will seem clearer and true to life. It is said that a good rule of thumb to go by is that if you want to print out a 4x6 picture, you should have a camera that uses at least 2 megapixels. If you want to print out an 8x10, then you will want more pixels, like 5 or 6 megapixels.

When you are ready to print, you will want to edit the picture, first. You should start by inspecting the picture before you print it. If there are any places that need to be edited, now is the time to do it. If you don’t have a photo editing software, you can easily find free ones to download over the Internet.

A very important thing in this part of the process to remember is that you need to back up the picture first or save your changed picture to a different name. If you don’t, you won’t have a chance to use the original to edit. If you make a mistake at this point, you will be up the proverbial creek without a paddle!

If you are going to print a picture, but don’t want every piece of the image, then you need to crop it out. This is a basic step to take, especially if you want to enlarge an
image, or only use part of the picture itself. You can easily crop (take out) outside areas of a photo, without being an expert at it!

Absolute must haves when it comes to printing out a picture, are the proper printer and paper. Without these two items, printing out pictures can be impossible! They don’t need to be the most expensive items you can find, but you will want them to be a good quality and easy to use.

You will need a high quality photo paper when printing out a picture from your digital camera. When it comes to the paper, just remember that the thicker the paper, the better the printout will be. (It won’t fade as easily, or smear.) If you want professional looking photo printouts, don’t skimp on the paper!

As far as the printer is concerned, use a good one! The actual printing of the picture is the most important step in this process, so pay close attention to the model you choose. You have to remember that in this department, you will get what you pay for.

To produce a good quality photo, just remember the basics.

**Chapter Summary**

There are only a few simple things to remember and if you do, you stand a better chance of making memories you can be proud of. When it comes to printing out pictures, take good ones to begin with, crop and edit the image, use a high quality paper and a good printer. If you follow those simple tips, you will be well on your way to making great looking pictures that you can keep or give to special people in your life!

**Printers for Digital Photography**

Conventional general-purpose inkjet printers can produce some surprisingly good output, but remember that almost all of them are designed around printing good quality black text, and that’s what they’re usually used for. The manufacturers know that, and
that’s where most of the design work goes. The good news is that conventional inkjet printers are very inexpensive.

Photo printers produce very high quality output, usually in a variety of standard sizes. Some smaller photo printers can only produce 4x6 or 5x7 inch prints without borders, larger photo printers can produce 8x10 (and generally 8 1/2 x 11 inch) or even 11x17 inch posters (though by this point we’re talking about some very expensive, specialized printers). Just about all photo printers are inkjets.

Photo printing uses a lot of ink. “Borderless” printing means that the page is 100% covered with ink. Print cartridge life estimates are created using text printing with 5% or 15% coverage, depending on the type of printer being rated.

So when you switch from printing text to printing photos, cartridge life will be reduced: If a cartridge is good for 400 pages of text, it may only be good for 20 pages of photos, depending on photo size. Dedicated photo printers are rated differently, as they are intended to print this way.

The situation is even worse if the printer uses multi-color cartridges, and using all your red ink ends the cartridge life with other colors still half-full. The best type of ink system for photo printing is definitely individual tanks; the reduction in waste can be considerable.

Color laser printers, once the stuff of dreams (or professional print shops); have rapidly become both more economical and more photo-friendly. The latest and greatest color laser printers cost under $300, produce high-quality color output, and features like PictBridge (that allows direct connection to many digital cameras) are starting to appear in this class. It’s looking like color laser printers may finally start to break into the huge home-office market, partly on their photo-printing strengths.

Even without going to specialized photo paper, you can improve the quality of your printer’s output by careful paper choice. 24lb weight paper is best for most photo printing, though more expensive than normal 20lb paper, used for most printing. Lower weights will often bleed through too much ink; higher paper weights can cause reliability problems in typical home office printers.
Another important factor in paper is brightness. Rated on a scale of 1 to 100, the brightness rating is essentially how “white” the paper is, or how thoroughly any other color has been removed. Low brightness papers will appear more “cream-colored” or off-white. Typical inexpensive office paper is rated about 83. For photo printing you want to use 95 or above. Brighter paper tends to cost more.

Let your printed photos dry before stacking or handling, and 24 hours before mounting in a frame or binder. Humidity can lengthen these times, and high humidity can even “melt” the ink from many inkjet printers.

Dedicated paper for photography is also rated at 95 brightness or above, and is available in gloss, semi-gloss or matte finish. Which finish you choose depends on your personal preference and the application you intend, from simple snapshot prints to postcards or framed display prints. Photo paper is quite a bit more expensive than even high-quality plain paper.

If you don’t print your photos every day, it may be less expensive to have them professionally printed. While many traditional photo developing shops work with a wide variety of memory cards, there are new alternatives you may not be aware of.

Professional print shops can print your photos from CD or floppy disk (and some can read memory cards), and can also produce posters and other unusual-size prints.

The photo printing kiosk can often be found in supermarkets and drug stores.

Don’t overlook these “photo vending machines,” they can produce professional-quality prints in standard sizes, read disks and memory cards, and some even have basic editing capability (cropping and color correction) as part of the
service. If your computer is a little slow or you don’t have good photo editing software, this can be a fine alternative.

Printers are something I have considered blowing up many times, since these critters cause more trouble sometimes than what they are worth. However, if you are digital photography you realize how valuable these items on in the biz.

**Software for Printers**

Printer software is one of the leading programs that photographers employ today, since it has taken the place of many darkrooms. Most any printer you purchase will include a software program, which permits the user to set the printer as he desires, including paper type and print resolution.

**Print resolution**

If you are seeking to achieve high-quality photos, the ideals are to optimize your printer’s resolution. Most professional photographers will set the resolution at 300dpi (dots per inch). Some photographers may not like the size of the images and may set the resolution at 200dpi.

One of the things you want to keep in mind while setting resolutions is that the dimensions should achieve a height, a width, and a resolution. The upside is if you change the resolution on most printers, it will automatically adjust width and height of image accordingly. For additional printer help you should refer to your user’s manual.

**Paper Types**

Printers need to know what type of paper you will use while printer from the machine. Knowing the paper type will help the printer to determine the effects of your images. Therefore, if you do not have a printer that mechanically adjusts to paper type, then you will need to learn the settings on your printer to command the machine.
Inkjet paper gloss types in premium demand is one of the better quality papers available that will deliver high-quality photos. Don’t think because you are a pro that you have to run out a buy printer paper that labels your career. Rather, inkjet paper has been around for some time, and accordingly to experts inkjet offers some of the better quality paper overall papers on the market for print.

**Printer Inks**

It depends on your printer, but some are laser while others are dye and so on. Inks are important to photographers, since if the colors are off base it can affect the printer. Most printers come with four cartridges; however, there are the elite, which have one-cartridge or else six cartridges. The six cartridge printers are said to be one of the elite printers offered. Instead of receiving black, magenta, yellow, and cyan, you also get a lighter version of cyan and magenta ink. Dot inks or printers that spill out dot inks can affect the sharpness of your images.

Dyes provides a high-quality image, while the pigment inks are water-proof and fade-resistant inks that work well with photography needs, however the cost outweighs other types of inks. Still if you want quality verses price, the pigments might be the route to take.

Now that you have a printer, paper, ink, resolution in check, and software you will need to learn a bit about troubleshooting, since printers often fail. Learn how to deal with issues such as banding, roller marks, missing or incorrect colors, misalignments, smeared and blurred photos and more, to prepare for printer disaster. Well now, we can get some tech tips on digital photographer printer issues.

**Chapter Summary**

Digital photographers are aware that they need cameras, printers, software, and much more while working with photography. The software is important since if you do not have the right software it could lead you nowhere. No only is software important however, you also need to consider printer resolution, paper styles, inks, and more. You will also need to get in on the printer troubleshooting scope, misalignments, banding,
roller marks, missing colors or incorrect colors, smeared and blurred photos and more. Oh, what a web we weave while considering digital photography.

**Digital Photography Printer Tech Tips**

Having a printer can give anyone a major headache. Printers often work smoothly, yet sometimes they just seem to want to take a vacation at what time we need them the most. At what time they take that vacation we are prancing around the room, heads pulling back our hair, and screaming all those words our mommas told us not to use.

Printers come in handy while creating digital images. Photographers will often employ printers to print photos. At one time, they relied on a darkroom, but since printers, scanners, and the like came available, printers are the source of reaching the ultimate limit of high quality pictures for print. In this section, we will discuss a few issues and will provide some helpful tips so that you can avoid the frustration. Here we go!

**Troubleshoot**

Troubleshooting is one of the prime considerations as a printer starts acting up. Troubleshooting tools are often available on your printer, or in your printer’s manual. Some of the prime problems printers will face are banding horizontally, misaligning vertically, miss colors or print incorrect colors, blur or smudge photos, and roller marking. Follow the steps below to see the problems and get a solution.

**Problem**

"I printed my photo, which came out with lines all over the paper. My photo is a disaster!" You got that right. After all, who wants to see a picture with lines blocking the view?
Solution
Lines on print are known as horizontal banding. The solution is to make sure that the paper is positioned correctly. Be sure the type of media is correct, or run a cleaning, which is often incorporated in the printer, thus cleaning the heads. You will need to refer to your user’s manual for complete details, since it is hard to say what type of printer you own.

Problem
Roller Marks is just as it appears. This means that when you print an image it comes out with marks all over the photo.

Solution
You will need your manual, since if this problem occurs you want specifics on cleaning the rollers. First, however you want to make sure the paper is in the tray, positioned upward.

Problem
Vertical Misalignments is a common problem. At what time the photo comes out of the printer you will see a double image around the edges, and sometimes in the middle of the print.

Solution
The solution is to correct the type of media, check the paper for correct positioning, clean the heads, use your alignment utilizes, and make sure the inks are refreshed. Refer to your user’s manual for more details on cleaning heads, using alignment utilizes and refreshing inks.

Problem
Missing colors or incorrect colors are white and black images, which is often what a photographer does not want to see. I want my picture in color!
**Solution**
Make sure that the settings for ink are correct. You want the ink settings in color format. Renew the inks if the ink is low. Use your cleaners to clean the heads. Check with your manual to learn more!

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**Problem**
Smearing and blurring print is one of the most frustrating appearances that come out of a printer.

**Solution**
You want to make sure the type of media is correct. Next, you can verify that the paper is facing up and position correctly. Refer to your user’s manual for more details.

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Okay, now we are up and running, let’s take a look at software applications and the like for digital photography.

**Chapter Summary**
It's unfortunate but common to have to deal with things like roller marks, vertical misalignments, missing colors and blurring when printing your photos. Thankfully, there are also many great solutions!
Digi Art

Most digital cameras now on the market come with editing software. They provide basic editing tools including a red-eye reduction and cropping. Some have instant fix tools that are intended to correct color and lighting, but they can damage your photos with irreversible correction where you have not saved a RAW file to return to if need be. To make the most of your photos you will need to invest in a graphics software program. There are a variety of digital editing software packages on the market that vary in quality.

The software should include basic tools like cropping or cutting a portion of the photograph in one easy step. There should be a tool to combine various elements from different images to make a collage. It is essential to have a manual adjustment tool for brightness and contrast. You will need a software editing tool that allows you to adjust the color balance and saturation. Filtering tools will ideally include custom, CC or Wratten filters. The tool that allows you to convert the image color to black and white should include several editing options. Two of the most common are greyscale and duotones.

The best editing programs allow hand coloring of black and white photos. The most advanced editing software has three...
shades of black included in their setting options. This provides enhanced color photographs as well as excellent black and white prints of your photographs.

The editing software that comes with your camera will not likely include all of these options.

Other important Digital Art tools that will assist you in making artistic statements with your photographs include global or selective dodging, burning, blurring and mosaic. More advanced editing programs include vignetting, linen, solarizing, posterizing and embossing. Most word processing and photo editing software provide image management options today that allow you to place an image in front of text, in-line with text or behind text. Sophisticated desk-top publishing software will provide text and image boxes to manually place your material.

Photo editing software should allow for a variety of print options including duplex printing and large format document prints. When buying computers and printers be sure to consider the need for a full-color photography printer ideally with CD imprint capabilities. Depending on your needs, you may want to include video editing software options that will allow you to integrate your photographs in short movies and audio-video presentations for home or work. CD and DVD burner capabilities make sharing, archiving, labeling and storing the creations you make from your photographs much easier.

A popular new use of digital photographs is for digital scrap booking. It is a great way to present your photographic treasures to family and friends. Digital cameras can be used to document artifacts, art and items you want to sell on the Internet. Digital scrapbooking and gallery techniques with related software will assist you in achieving the best result.

Scrap booking software may include tools for restoring old or damaged photographs and for retouching dirt specks and scratches. The software will have settings for sharpening and unsharp, masking, removing distracting backgrounds and creating album pages. Be sure the software includes tools for resizing images, monitoring and changing the photographs dots per inch or dpi resolutions. Resizing should provide several measurement options including per inch.
If one goal for your editing activities is to place the images on the Internet, you may enjoy learning some of the Internet editing tools like Java Script. This allows you to manipulate your photos in a variety of ways using mini programming techniques. Java Scripting may become an artistic goal of your photography and thus inspire a variety of options while you are taking photos.

Whatever your needs in software editing DIGITAL ART is a rapidly growing past-time, profession and service for many people around the world.

The amazing thing is that with the Internet, we can share our DIGI ART with people from every nation in the world. That is ample motivation for presenting the best image we can produce with the time and resources we have. Make the most of your DIGI ART opportunities by becoming more familiar with software editing programs available to you!

In an effort to create a lasting impact from your photo, leaving the impressions on viewer’s minds, it should have something that keeps him glued. You can employ Adobe PhotoShop’s special effects tools in the menu to add a lightning effect. You can double your exposures or do whatever you choose. The advantage of owning Adobe Photoshop is the rewards it will bring. In fact, I used this program to design my book covers, make commercials, advertising slicks and more.

**Lighting Effect:**

You can use various types of lighting effects and of different colors, applying them to an image using Adobe Photoshop. This will enhance your photo tremendously.
How to do it:

We’ll follow a stepwise manner in doing this:

1. Open your editor or Adobe Photoshop program

2. Now open the desired image (make sure you open it in RGB format)

3. Now from the filter menu choose Renderer and then select your desired lighting effects.

4. You will see the lighting effect dialogue box opens up

5. Choose the desired lighting style from the topmost selection menu; you will notice the options style of lights.

6. Choose the light type and move the sliders to set the intensity and focus.

7. You can also change the properties by toggling the sliders for glass, material, exposure, and ambiance.

8. You can also change the color of light. To change the color of light just click on the boxes to the right of the light type and properties. This will open the color, picker dialogue box. Choose a color and press ok.

9. To change the direction or placement of light just drag any of the points on the outside ellipse or center point. Click ok after you have adjusted the direction and placement of light.

Creating Double Exposure effect:

A double exposure image is created by overlaying two images on one another.
Like above we’ll again follow a stepwise procedure:

1. Select all or a part of the image using the selection tools at the top of the toolbar.

2. Now from the edit menu choose copy.


4. From the window menu, you can select the show layer.

5. On the ‘show layer’ popup right click and choose new layer and press ok.

6. Now go to the edit menu and press paste.

7. From the layer’s palette, move the opacity slider to 50%.

8. Now drag the mouse from inside the selection to move it.

9. To scale the pasted selection, click on image menu and then select image size. Adjust the size by adjusting the pixels and height from the pop-up window.

The editing programs today can do wonders to images. One of the most popular programs is Adobe PhotoShop, since this editing program is one of the most sophisticated tools. Most pro photographers will use this program, since you can create websites, book covers, images, movies, and more. Adobe is also used to design manuals, graphics, commercials, fliers, and more.

Outside of lighting effects, you can also setup brick backgrounds, or whatever background you choose. If you own this program you know what I am talking about, however if you have never had the experience and can get the opportunity to try out Adobe I promise you will have loads of fun. For additional editing assistance check out your menus, Help tools. Now take a peek at shadow and brightness in the world of digital photography contrasting.
Chapter Summary

You'll need a great program like PhotoShop to ensure you can edit your photos like a professional. This will allow you to do basic editing work like cropping and changing color saturation, but you can also do an incredible number of advanced digi art as well.

Shadows and Brightness in Digital Photography
Contrasting

When the lights come down to the final draw what will your picture look like? Some people are gifted and can take a picture straight from a camera and deliver a quality shot. It would be nice if we all could do this, but it is not a reality. Nor is a reality that those fortunate people can do this each time they use a camera.

What are we to do?

You snapped a photo that you hoped would come out looking like a winner. In the photo is your favorite pet, yet in the background the scene is dark.

What are you to do?

Crack open the image-manipulator program because you are going to need a few tools. Now that we have an underexposure shot situation, we want to turn this picture inside out and make it an exposure copy.

Most editing software, or at least a lot of them, will automatically adjust brightness and contrast by using filters. The downside is the computers can’t read a picture as you can read it, and will adjust the photo to its own liking, which is often not to your liking. Therefore, you want to get out your thinking cap, since you are going to manual adjust your own brightness, contrast and shadow if you like.

Assuming you are using Photo Deluxe imaging manipulators, we are going to check out the commands brightness and contrast. Once you select the commands, you will notice a dialogue box appearing in the window. The box should have sliders. With your
mouse, click on the brightness slide and move it left or right, depending on what you are seeking to achieve.

If you want less brightness, move the slider to the right. Do the same, dragging the slider to the left if you want a darker image. If you notice in the dialogue box, there is a little white box with numbers showing. You can use this box to select your own level of contrast or brightness if you know what you are doing.

Likewise, to achieve contrast effect, move the slider either left or right.

**Tip**
You should highlight the area you want to contrast or brighten, since if you command brightness and contrast to adjust the entire pictures and some areas are dark while others are light, you will get an off tone shading. That is, the light areas depends if dark or light will either get darker or lighter.

**Note:** YOU can use the saturation command to adjusts overexposure colors if they appear flushed down.

One downside about Deluxe Photo programs is that it doesn’t give you the sophisticated commands that Photoshop offers. Still, you can do a lot with either program if you know your moves. It pays to learn the commands in all imaging-manipulating programs so that you have a feel of the table when the cards fall down.

You can use the Shadows Command to cast a shadow over the image. You are the only one looking at this image now, so it is up to you to adjust accordingly. You can play with each command, experimenting with the image as long as you saved an original copy and backed it up. This will give you the opportunity to learn your stuff. Ready to Balance and Scheme Edit?

**Chapter Summary**
There are bound to be times where your colors just don't come out right on your photos.
Using photo programs is easy, and they allow you to correct a lot of the mistakes made out on the field.

**Digital (Photography) Rights**

Rights can be a tricky thing when it comes to photography. Most people take pictures of natural scenes, family and friends, or inanimate objects. When you’re taking pictures of people in public, particularly for publication, the issue of rights bears its head. If you ask a group of five photographers what’s okay and what isn’t, you’ll get at least five different answers!

Generally speaking, what is visible in public places can be photographed. If you’re standing in a mall, a park, or on a public street, anything you point your camera at is fair game.

After all, if anyone standing on that street can see what you see, how could sharing a picture be a problem? That common-sense defense will usually hold up in case of conflict, but there are exceptions to the rule.

Public figures, celebrities, and anyone involved in events of public interests have less privacy rights than the average citizen by nature of the fact that the average person being placed in public view changes their situation, while a photograph of a mayor probably won’t. That’s not to say that these people have no privacy rights at all.

If you use a telephoto lens to look into an area restricted from public access, you may well expose yourself to civil charges of invasion of privacy. It’s generally considered
rude to go where you’re not wanted, and doubly so to take pictures.

While you may want to follow in the footsteps of great reporters (or even Paparazzi), and some of them have become quite successful, you also have to consider that many of those celebrity photographers have developed relationships with many celebrities and their agents, and have the backing of firms or their own lawyers in case of civil suits.

If a picture of a celebrity is valuable, it’s usually because it’s rare. If it’s rare, it’s usually because they don’t want to be photographed. If they don’t want pictures taken, and you take them, you may be sued. Remember, a millionaire celebrity doesn’t have to win the case to outlast a beginning photographer in court.

Whoever you’re taking pictures of, you should try to be aware of the laws of the state you’re in. Some states, for example, have passed laws against using hidden cameras or microphones, partly to reduce the conflicts that often result from ambushing public figures.

Celebrities aside, private places in general can be tricky from a rights perspective. Usually if something can be seen from a public place or if you are invited to a private place, photographs are okay, but it’s always best to get written consent from someone who has authority - a property owner or manager.

Some people are generally unwilling to give written consent but will give verbal consent, often with limits. In these cases, use your best judgment and definitely stick to any agreements you make. If the owner seems uneasy, offer to skip the photographs this time around. It may make things easier the next time you deal with this person.

Permission to enter private property must be by someone who has the proper authority to give you that permission. Do not assume that police have that authority - they may have the right to control traffic at crime scenes, including allowing or denying access, but that won’t immunize a photographer from civil legal action later on.

It isn’t over once the pictures are taken, either. Pictures taken legitimately can usually be published without problems, but be aware of where photos are placed, how they are
described, and what pictures are placed together. There have been many defamation lawsuits filed over stock footage or pictures of people, even when permission was granted, when particular people or places were wrongly connected to negative stories.

This isn’t just limited to newspapers or magazines - even use of photos personally taken and placed on your own website must be treated with care if the “story” has negative connotations or if you don’t know the subjects well enough to know if they’ll be offended.

Usually, common sense is enough to keep a photographer out of trouble. But the more you know about the rules, the better your common sense will be.

Chapter Summary

Understanding digital rights is not easy because there are often no clear answers. Generally, anything that can be seen in public is fair game, but you always have to respect the rights of people.

PART FOUR: ADVANCED DIGITAL PHOTO INFORMATION

A lot of the information you read above might have been completely new for you. Some of the information might have included things you already knew. The cool thing about learning about digital photography is that everyone is on a different step on the path to become an amazing photographer.

From this point on you'll find information that is geared toward more advanced photographers. That doesn't mean a new person shouldn't read it though! The ideas, techniques, and tips below are essential for everyone who wants to become great at
digital photography.

Don't let yourself get overwhelmed, this information will sink in faster than you think! Better yet, it will really show through in your pictures as they get better and better.

What is White Balance?

White balance is a very important element in digital photography. It is the number one difference between digital and film photography. If you have the improper amount of white balance in your digital photograph, it is pretty much unfixable, too, so it is very important to pay attention to it at all times. Basically, white balance is known as the way the digital camera adjusts to compensate for the kind of lighting conditions in each scene. It is essential in creating the true to life colors that digital photography is known for.

Why is white balance so important in digital photography? Because a digital camera picks up pretty much every color in an image, like a video camera does.

If you have ever used a digital camera and your images appear to have a green or pinkish tone, then you are looking at the result of not having the proper white balance.

Have you taken a picture of the most beautiful sunset, only to find that when you check it over in your viewfinder, that it appears dark and off color? Well, the reason for this is that your white balance is not at the proper levels. With a digital camera, pretty much every scene you capture will involve many forms and levels of white balance. If you are taking a picture of the sky, what appears white to your eye, may have a bluish tint in a digital camera.

How do you correct your white balance? With a digital camera, you can control the white balance more easily than a traditional film camera. You will need to adjust your white balance to every different lighting condition you encounter. In most digital cameras, the white balance will be automatically adjusted for you.
There are models, though, that allow the user to set the white balance manually. You will need to check your camera’s manual to be sure where the white balance setting is located, if you can manually adjust it.

It is very important that you always check the settings on your digital camera whenever you begin to shoot pictures. There is nothing worse than spending the day taking new photographs and then realizing that you have the camera on the wrong settings. You will want to really pay attention to your white balance setting because the lighting conditions around you will most likely change from day to day.

Whether you are a beginner or a novice digital photographer, the white balance of your photos will make or break the way your pictures turn out. It is not hard to correct your white balance setting, before you begin taking pictures, but if you don’t, it is extremely difficult to correct it in your pictures.

You may not think of the white balance of your digital camera, but you really need to train yourself to do so. If not, you are more likely to have photos that don’t offer the colors that you tried to capture.

This problem is especially easy to view, as you can easily check your pictures as you take them. Unlike a traditional film camera, you can retake pictures that don’t come out the way you wanted. If you take a few tester pictures, you can gauge your white balance and make the adjustments needed, before you waste your time and patience!

The next time you decide to take pictures with a digital camera, you absolutely must take the time to check on your white balance setting. Keep in mind that even though your camera has settings for white balance, the settings won’t work properly if you forget to use them.

Take your time and make sure that everything is set properly and you won’t have to go back and try to correct it. If you don’t check the white balance prior to taking your
pictures, you will be very upset when they don’t appear as you thought they would. Remember that it is very hard to correct the white balance once the pictures have been taken!

Chapter Summary

White balance is essential to ensure a good look for your photos. You can adjust this setting manually, or allow your camera to do so automatically. Always double check, because the camera's automation isn't always right.

Interpolation and Digital Zoom

There are certain features on modern digital cameras that you can live without. Two closely related features in that category are digital zoom and interpolated resolution. Both rely on the same principle, and it is definitely something better left to the editing software on your computer.

When on the subject of digital cameras, interpolation is just a term for a computer’s best guess as to what should happen when you try to turn one large pixel into more than one smaller pixels. The computer (whether it’s your home PC, a dedicated graphics machine at a photo lab, or the chip in your camera) uses mathematical formulas that try to guess, based on the colors of surrounding pixels, what the new substitute pixels should look like. For example, if a series of black pixels in a line on a white background are doubled, the pixels added between the black pixels will be black, and those between the white pixels will be white.

But most photographs aren’t just well-defined black and white boundaries - in fact, none of them are. So when faced with angles, gradients, or irregular shapes, the computer has to use its stored rules to guess what color the new pixels should be. In theory, the better routines allow the computer to do a pretty good job at smoothing out the image when the resolution is increased and all those new pixels are put in place.
In practice, unlike in the movies or on TV, you can’t get information out of a picture that isn’t there. That tiny black dot on the horizon isn’t going to turn into an umbrella when you double the resolution, it will just be a bigger black dot. So if you need a “bigger picture” than you have, why not use interpolation? The trick is that the interpolation done in your camera is not the same as the interpolation done in your computer’s editing software.

The camera has one small, slow chip and very little memory to do that interpolation. Your computer has a big, powerful processor and lots of memory, not to mention, no particular need to compromise their software routines to fit into a small amount of memory or trade quality for speed to avoid long delays after taking a picture.

In short, your computer will do a vastly better job at interpolating the picture than your camera will, and to top that off you can choose different algorithms (often named after the mathematicians or programmers who created them, like Lanczos or Mitchell) and experiment with how well they work on a particular image.

You can even save different versions of the file, including the original, which you can’t if the camera is doing the work. There’s nothing to be gained by compromising image quality, which is exactly what you’re doing if you don’t use the best filter you can get your hands on.

The interpolated image even takes up more space on your camera’s memory card, but it doesn’t hold any more information than the original. Finally, as I mentioned above, it adds time between shots, as the camera has to grind away at reshaping your picture before you can take another one.

In fact, I can’t think of a single reason why you’d want your camera to do this job. Unless you just want to advertise a higher resolution than your camera is capable of recording.

This brings us to digital zoom, which, I hate to say, is also nothing but a marketing gimmick. All digital zoom does is subtract the center of your image (for example, a 2 megapixel camera (1600x1200 resolution) with 2x digital zoom simply takes the center 1280x960 pixels of the image (1 megapixel) and “interpolates” that lower resolution image up to 1600x1200 resolution.
I call it “the illusion of magnification,” and about the only reason it exists is to convince people that they can zoom in when they can’t. You’re far better off just snapping the picture and cutting the center out yourself. You can duplicate the action of the “digital zoom” (only better) on your computer, and if you decide you want to keep what would have been left out, you can!

**Chapter Summary**

Interpolation and digital zoom are both features you'll find on your digital camera. The problem is that digital zoom is basically worthless, and interpolation is a lot easier and more effective when done with a computer.

**Motion Control**

Motion control is a great photography technique that creates special effects looks. This is for more advanced users because it involves photographing different things, and then merging the images to create one, amazing photograph. These photographs often create the element of motion where it would normally be a flat picture.

There are two different methods you can use. The first is to use a fast shutter speed, or you can use a long exposure. There are different times to use these methods, and you'll learn to choose the right one with experience. Sometimes you want the image to blur (like with a waterfall in order to give the sense of motion), and other times you'll want it to be incredibly sharp. Part of successful motion control photography is knowing what your subject is going to do at all times. That means you should study the subject beforehand and plan ahead.

You also need to make sure the background is appropriate for the shots you want to
take. A distracting background will make this impossible since you're going to be panning along with your subject.

As a final tip, you will want to use a continuous AF to capture the action. This will ensure that your subject stays in focus the whole time. This is important since your subject is likely to be moving around fast.

**Chapter Summary**

Motion control is a great way to create special effects for your photos. This can be achieved with settings both while you're taking the photo and once you're editing the photo.

**Depth of Field**

In order to become a better photographer, you definitely have to understand what depth of field is. Basically, it is the part of the scene you're photographing that is in focus. There are different factors that determine the depth of field.

**Lens Aperture**

This determines how much light can go through the lens. This usually ranges from f/2.8 (large) to f/8 (small). The f/2.8 aperture gives a small depth of field, while the f/8 gives a larger depth of field. You would tend to use a large aperture when you want your subject to be in focus, and the background to be blurred. You would use a small aperture when you want it all to be in focus.
Distance From Subject

This one is easy! When your subject is close to the camera, you have a smaller depth of field than if your subject is further away.

Focal Length

A wide angle lens has a greater depth of field than a telephoto lens. This is yet another reason why it's best to make sure you have an array of lenses, so you can always make sure you can get the look you want. There is some contention about focal length and how it affects depth of field. The different lenses magnify differently, and the results look different. Still, this should be part of your experimentation with DOF and getting the focus you want.

Chapter Summary

Lens aperture, distance from subject and focal length all affect depth of field -- the part of the scene that is in focus.

What is EXIF?

Exchangeable Image File (EXIF) data, saved by modern digital cameras in each picture file, is a powerful tool for both keeping track of your work and learning more about how to use your camera and how to take advantage of its capabilities. Created by the Japan Electronics and Information Technology Industries Association, this standard is now used by almost all digital cameras.

EXIF data stores, as part of the picture file, information such as the date, time, camera model, and settings such as focus mode, flash mode, ISO sensitivity setting, white balance, and many more facts about the state of the camera when the picture was taken.
The EXIF data actually envelops the picture data, be it compressed (usually JPEG format) or uncompressed (RAW or TIFF format) data.

The data does add anywhere from 100 bytes to 64 kilobytes to the size of the file, but it is invaluable for anything from keeping track of work, indexing large numbers of photographs, or learning more about how your camera’s settings affect the quality of the final product.

You can use your photo editing software or even many picture viewers or dedicated programs, to view and copy EXIF data. It can also be used by specialized software provided by the camera manufacturer when loading pictures into your computer to record information about camera settings and even provide editing options.

One of the things these transfer programs can do is to change the time stamp of the newly created file to match the time the photo was taken. That’s another good reason to set the clock on your camera to the correct time.

This data can be used to record a log of photographs for a variety of purposes. The time a favored shot was taken may be referred to later in duplicating light conditions. You can keep track of settings for experimenting with changes in settings, and never get your pictures mixed up because the data is stored as part of the file itself. You can export or copy the EXIF information and not have to manually enter information in your log.

You can recreate the settings of a favorite shot or repeat a favorite effect, and higher-level information such as special lenses and light metering modes can be invaluable as you advance your knowledge of photography. You can even share this information with friends or colleagues to help duplicate tricky shots, or create a database or spreadsheet of the effects of specific settings to help you recreate effects or types of shots under different conditions.
An example would be keeping track of how white balance changes affect the appearance of particular colors. Instead of making notes of what changes you made and what order photos were taken in (particularly when the string of photos were all taken of the same scene), you can skip the notes and compare the settings in the EXIF data instead.

Then, when you work on your log, you can copy setting information on over and just make a note about which settings worked best.

This knowledge can help you predict how a shot will turn out, and reduce the amount of time you spend editing or recreating pictures.

Since there are so many manufacturers involved, some of the information may require interpreting. For example, while one camera may report shutter speed as 1/200, another as 0.005 seconds. You may need to create a “cheat sheet” for your camera (or each of your cameras) if they use unconventional terminology, for example the standard terminology for light metering modes is evaluative vs. center-weighted… so what does it mean when the camera reports “pattern” or “multi-segment?”
The best thing you can do is to use your photo editing software, or find dedicated EXIF reading software online, and have a look for yourself. The information held there can save time, and frustration.

One more thing: IPTC (International Press Telecommunications Council) information can also be stored in JPEG files. These fields hold information like captions, copyrights, origin information, categories, credits and special instructions. These are designed for use by photographers submitting work to press outlets, but you can use them to leave notes to yourself about a picture as well.

Chapter Summary

EXIF data stores important information like the data, time, camera model, and camera settings like focus mode, flash mode, ISO setting, white balance and more. This is a great way to keep track of your photos!

Raw DIGI photos

Some digital cameras allow the photographer to store in the most primary format the RAW material captured by a digital camera. RAW archival retains the highest potential of a true representation of the object or scene being documented where a camera's features are used appropriately. Most digital cameras designed for professional use are capable of producing and storing images in RAW format.

What is it that is actually capturing the image?

Where film cameras have a roll of film exposed behind the aperture, digital cameras have a sensor. Most digital cameras use an array of photo sensors under a filter matrix
which results in the sensors each recording red (8-12 bit), green (8-12 bit) or blue (8-12 bit) light intensities. These separate sensors or channels create what is often referred to as the Bayer matrix pattern where every other sensor records green with the alternating cells recording in red or blue.

Each pixel in a conventional sensor only captures one color. This data is typically 10 or 12 bits per pixel, with 12 bits per pixel currently being most common. Most cameras now provide the option to instantaneously store the captured material in a RAW file while alternatively the camera's processor can weave the RAW data using all three color channels to provide an instant 24 bit full-color JPEG or TIFF display image.

RAW is not an abbreviation but literally means "raw" or "unprocessed". A RAW data file contains the original image information as it comes off the sensor before in-camera processing so you have a variety of choices in processing the data on your PC using one of many editing software programs available.

If you have ever wondered why TIFF files are historically larger than JPEGs we provide an explanation that will hopefully dispel the mystery. Even though TIFF files retain only 8 bits per channel of data, that data will take up twice the storage space because it has three 8 bit color channels versus the one 12 bit RAW channel. JPEG uses compression of the data at the cost of image quality to manage the data. Thus, RAW data offers the best of both worlds where it preserves the original color bit depth and image quality while saving space using only one 12 bit RAW channel.

Some cameras offer compressed RAW that minimally compromises data. If you are taking photographs for fun, JPEG offers an option to increase the number of photos stored on a memory disk.

So, why would you want to archive your photographs also as a RAW data file?

JPEG compression permanently transforms your photographs, however many camera settings used to compress RAW data can be undone when using RAW processing software. White balance, levels, color adjustment and sharpening can be undone or recalculated based on the RAW data. Further, where RAW has 12 bits of integrated data, it is possible to extract details that are lost in fragmented 8 bit channels used to archive JPEG and TIFF photograph formats. It is best to get a camera that provides you
the best of both worlds. Yes, you will have to adapt your photography habits to allow for transferring the RAW data onto disks because you will need more storage to archive RAW data.

**Rough Side of RAW**

RAW formats differ from camera to camera and there are debates about camera programming that provides some control over your RAW files by the camera manufacturer. Where protests have been issued, there is an effort to provide standardized RAW formats that would better serve the consumer where general market software could be used to edit the RAW material.

If your computer is equipped with lots of processing memory, RAW data will not be as much a problem, however presently, RAW files take a lot more time to open and process than JPEG and TIFF files. That is where the option to capture in RAW and JPEG simultaneously is a strong benefit. While standard editing software is now offered on the market, the way that software processes RAW files may differ depending on how the software from the manufacturer is recognized by the software. Thus, be sure to find and ask a savvy sales expert.

Most sensors record light over a 12-bit range, with intensities of more or less 4096 possible values. Each sensor with 12-bit output is one and a half bytes. So our small chip with 20,000 light cells gives a raw output of 30,000 bytes. In an actual file there is some non-image information, but that can be ignored for simple calculations.

Compression used in either horizontal or vertical direction can result in the loss of a small amount of RAW image data ultimately it is the photographer that must chose where they want to compromise whether on quality, storage demands and/or time constraints.
Chapter Summary

The RAW data files contain the photos you've taken in their truest form. There is a lot that gets lost in translation with JPEG, but there are some downsides to RAW as well, such as being a lot larger.

Digital Photo Troubles

Unfortunately, there are times where you might get stuck with your photography. Images don't always come out the way you hoped they would! There are many things you can do to troubleshoot, however. Also remember that the more you put these techniques into practice, the easier it will be for you to get it right the first time.

Issues With Color

There are many reasons why your color might be off. We've already discussed the difference in tonal quality between JPEG and RAW files, so make sure that isn't what is causing your dilemma. Beyond that, there are many other options you can look into.

The easiest to deal with is changing your flash. Built in flashes often create strange color effects because they are too bright. That's why many experts recommend that you do not even turn the flash on if you have a point and shoot, because the results won't be what you were hoping for. This built in flash causes washed out colors, very little contrast, and underexposed backgrounds. It can also cause red eye.

Blurry Photos

Dealing with blur can definitely be a pain if that wasn't the look you were going for (such as with some motion control). There are many different reasons why your subject might turn out blurry.

The issue is often that your hand just wasn't steady enough. It can be hard enough to
hold a point and shoot camera steady, let alone a camera that has a long lens! A tripod is definitely the answer here. There are many tripods on the market. Some are more portable than others, so you might want to get a couple depending on your situation and photography style.

You also might notice that your photos appear blurry in some situations but not others. This usually occurs because of the settings you have on your camera. A slow shutter speed can result in blurriness since there is more time for error. Faster shutter speeds often result in sharper images.

High zoom is another instance where your photo might become blurry. You can see that on your viewfinder as you zoom closer and closer into your subject. When you combing slow shutter speed and high zoom, it's easy to see where the problems can occur.

Once again, a tripod is likely your answer if you need to use those settings. If it's not convenient for you to use an tripod, you'll want to find some other way to stead yourself. A table, wall, or bench work well, among other things.

If you like more automated solutions you may want to look for a camera that includes an image stabilizing lens (or buy a new lens). There are many point and shoot cameras that offer this option as well.

If your photos keep turning out blurry, don't worry! You can use these methods to fix the problem, and practice really does make perfect.

**Exposure Problems**

Overexposed photos often look like they are way too white and washed out. It can range from a simple color richness problem, to it being so white you can't make anything out. The problem here is that your exposure is set wrong.

Always check your exposure settings. This is especially important if you are not happy with the way a photo turned out. If the problem persists as you photograph a certain subject you will want to manually change the exposure settings.
This happens a lot of there is a bright light source somewhere in the scene. The camera gets "confused" and sets itself incorrectly for your end goal. A great way to overcome this is to put an area in your viewfinder that is free from these outlier light sources. Press the shutter down halfway, and move your camera back to the original scene. It will come out great because you took the time to find a scene that portrayed the lighting you had in mind.

**Image Noise**

When discussing image quality for digital photographs image noise is the equivalent of film grain for analogue cameras. Despite the fact that we are working in a visual instead of an audio medium, it is called noise, which is analogous to the subtle background hiss when a television channel has no broadcast or your audio system is turned up at full volume without a record or disk.

In digital images, noise refers to random specks on the surface of a photo, which can degrade the quality of the image. While noise is often seen as a distraction and detriment to a photograph, it can be a desirable condition for certain artistic effects. Noise varies with sensitivity settings, length of exposure, temperature, and different camera models.

The signal to noise ratio (SNR) is a useful and universal way of comparing the relative amounts of signal and noise for any electronic system. ISO setting or ISO speed are the standards, which describe a camera's sensitivity to light. A camera’s relative sensitivity to light is represented by the ratio of the two ISO numbers. In terms of practical application, a photo taken at ISO 200 will take half as long to reach the same level of exposure as a photo taken at ISO 100 where all other settings are the same.

Analog or film cameras use the term ASA speed, however it is important to remember that a single digital camera can capture and store images at several ISO speeds.

Amplifying the image signal in a camera can also amplify noise and thereby higher ISO speeds may produce progressively more noise in the photo. The character of an image in a photo can also change noise. Where lighter areas in analog or film photos tend to
have the most noise, it is the darker areas of digital photographs that have the largest amount of noise.

Digital cameras produce three types of noise called random noise, fixed pattern noise and banding noise. Random noise describes the abnormal intensity of color fluctuations compared to the rest of the photograph. It is most influenced by the ISO speed however the pattern of random noise may change even if exposure settings remain the same.

Random noise may be the least objectionable, but the most difficult to remove where the noise is too often mistaken for true image characteristics. Fixed Hot pixels or fixed pattern noise describe pixel intensity that far exceeds that of ambient random noise fluctuations.

Higher temperatures and long exposures may increase the occurrence of hot pixels. Fixed pattern noise is unique where it often shows similar distributions of hot pixels even if taken under the same ISO speed, temperature and length of exposure. Fixed pattern while the most objectionable visually, is the easiest of the three to remove because it is a repeated pattern. Once the internal electronics of a camera knows the pattern, it can subtract the noise away to reveal the true image.

Banding noise is associated with the camera model and related characteristics. It is most visible at high ISO speeds and in shadows. When brightening an image, banding noise may become noticeable when using white balances. It is not always the number of pixels that reduces noise, but actually the greater the area of a pixel in a camera which allows a greater amount of light into the pixel causing the sensor to produce a stronger signal. Cameras with physically larger pixels generally appear less noisy since the signal is larger relative to the noise.

**Demosaicing**

The CCD or sensor is removed from a digital camera and downloaded to the RAM on your computer to de-mosaic the photos. At that point if blurring occurs before the demosaicing, then it is predicted that the demosaicing interpolation would contribute few noise artifacts. Where blurring occurs at a later stage in the process, then it could
be determined that demosaicing would have a noticeable effect on the image. Three types of mosaic include a Bayer pattern, vertical stripes or a sparse checkerboard. Upon closer observation, it is often possible to determine a noise pattern and thereby the techniques needed to remove unwanted noise.

Editing software is available to reduce noise or to perform what is called image averaging.

There are a variety of tonal variations, chroma and noise luminance. Standard examples of noise variations based on ISO and color channel can be found for most digital cameras. Remember that photo noise is composed of two elements: fluctuations in color and luminance.

Image quality is not totally dependent upon the quantity of megapixels, but is also greatly determined by the capacity of each megapixel to gather light. Early models of digital cameras had much higher internal noise levels caused by less sophisticated electronics.

**Chapter Summary**

Unfortunately, there are some situations where you'll end up with photo problems. Some of these include incorrect color, blurriness, over or under exposure, and noise. There are ways to correct these issues, so with a little guidance and trial and error you should be able to prevent them from happening, or even fix them after the fact.

**Special Shooting Situations for Advanced Users**

As you become more and more advanced, you'll want to try different things with your photography. Experimenting is the best way to get those shots you never thought were possible!
Macro Photography

Macro photography is a favorite of many photographers. It is simply when you take photos of small things, or do close ups of things that are much larger. While this is an advanced technique, many point and shoot cameras have this function as well!

Of course, the best photographs really do come from SLR cameras that have special macro lenses. These will help you zero in on those details that would otherwise go unnoticed. It is very important that you know not to get a macro zoom lens. You want a macro lens since these are high quality.

A great kind of macro lens to get are the autofocus models that have focal lengths between 50mm to 200mm. That way you don't have to switch lenses, so you can capture whatever details you need to capture.

You'll generally find that when you're taking macro shots you'll need some artificial light. This is another reason why macro shots are easier with SLR -- you can always choose your flash. Regardless, you can get the best shots if you choose a time of day that is well lit. If you are desperate and you must take a macro shot using a point and shoot you can put tissue paper over the flash to diffuse it some.

Get your shot lined up, and take a good look at it on your LCD screen. The focus should be very sharp since your subject is likely all that will be in the shot. Don't get too caught up in the details here, as you never know what the shot will turn out like. Experiment with different apertures, angles, and areas of your subject.

For example, if you were taking a macro shot of a newborn baby you might focus on his little toes, lips, hands, fat folds, etc. Let your artistic creativity reign!

Many people find that taking macro shots can be difficult because of a little bit of camera shake when you press the shutter to take the picture. You can either use a cable release or just use a timer to ensure that your camera will be still when the picture is taken. A tripod helps tremendously once again!
Black and White Photography

Just because we live in a digital world where it's so easy to manipulate color doesn't mean it's time to forget about black and white photography! In fact, black and white photos are often some of the most beautiful, meaningful, and emotional.

Your camera probably includes the ability to shoot in black and white, so consult your manual for this setting. Experiment with different lighting situations so you can really come away with a fantastic photo.

Earlier discussions of RAW files were mostly referring to the fact that you can get so much better color quality than with JPEG. Well, the same is true for black and white. You'll be able to come away with much better contrast and black and white quality with RAW. Check to see if your camera offers this option.

There are some cameras that simply don't have the option to do black and white. If you're doesn't, or you want to shoot in color first for some reason you can still make them black and white later down the road. In fact, you can often have better control over the final black and white photo if you shoot them in color first and then manipulated them on the computer.

Yet another tip is to ensure that your ISO is set low. "Noise" can be a big problem with black and white, so a low ISO can help offset that. It can also be helpful to wait for a somewhat overcast day. Experiment with different lighting options!

Finally, when you take color photographs the color can take the eye to certain places. When you have a black and white photo you have to rely more on other elements. This can also be a very good thing! Shapes and texture add a whole new element of interest that would be totally lost in color.
Panoramas

There is something so special about being in a fantastic place and getting to see everything around you. You want to capture it on camera! The only problem is, when you get home it looks nothing like it did in person. This is a disappointing phenomenon that photographers everywhere have to deal with.

Enter panoramas!

These are when you take multiple images and merge them together to form one image. Imagine you were taking a picture of the Eiffel Tower. You would photograph the different sections, then merge them using computer software at home. Now, you've to the whole view better than it's ever looking before.

There are cameras that have the panorama setting right on them to make things even easier! If you have that setting, explore your camera's manual to learn more about how to use it. Otherwise, the technique described below will be your ticket to great panorama shots.

The first step is to make sure that all your settings stay the same as you take each shot. For example, you don't want your exposure to be higher in one of the frames than in another. Lock your exposure and you'll get a great result. A tip -- put the whole view in your frame, lock the exposure, and then take the photos one by one.

If your camera has a panorama feature included it will help you line up each shot. If you're doing it manually, you'll want to make sure there is at least 30% overlap between the shots. A tripod works wonders in this situation!

After you're finished with your photos for the day, you can head home and edit them. Your camera's software might have a section for stitching together the shots you've taken. Your photo editing software will walk you through the steps, and you'll love the results!
Shooting for the Web

When you want to upload your photos to the web, there are some special things you'll have to take into consideration. For one thing, when you take the photo and try to upload it directly and send it off in an e-mail it will probably be way too big. People who are opening their e-mail and reading web pages need speed! You might be dealing with slow connections and short attention spans.

The first thing you'll want to do is edit the photo. Remove red eye, increase contrast, etc. You should also crop the picture so that it only contains the elements you want it to contain.

As we've talked about, RAW photos are best for quality. In this case, you'll want to save and compress the photo as JPEG. Save it at around 80-90% for best results. It will still look great on the web! (Though not for publication.)

Chapter Summary

Special photography situations are often the most fun! Macro shots allow you to get detailed images of the tiniest aspects of life. Black and white photos can hold a lot of emotional meaning and gives a different perspective than color. Panoramas allow you to capture things that would otherwise look flat and tiny, such as a great 360 mountain view. Finally, shooting for the web requires special consideration and smaller image sizes.

Proper Composition

This just might be the most important chapter that really takes your photography to the next level! In fact, even beginner photographers should learn these all-important tips for composing a photograph properly. Composing your photos the right way will ensure that they are visually eye-pleasing and balanced.
Rule of Thirds
The first concept you need to know is the rule of thirds. You'll basically want to visually break the scene you're going to take a picture of into thirds, both horizontally and vertically. It will end up looking sort of like a grid. There are now four points in the image that are most important to focus on. The elements of interest should basically be at these four points.

It's kind of interesting why we know that the rule of thirds works! Researchers have found that these four points are where people's eyes naturally go when they look at a photo. You're basically creating a more naturally pleasing photo that follows these patterns.

As you look at a scene, you should think to yourself, "what are the most interesting points?" This will help you frame and compose your shots properly.

Don't worry! Even if you make some mistakes out on the field, you can always edit and crop later on. Also, after you understand this rule, you'll understand when it comes time to break it too!

Choosing a Good Focal Point
Your focal point is what you are mostly interested in with your photo. You want to make sure every photography decision you make is going to enhance this focal point. Use the rule of thirds to incorporate this as the main point of interest.

Some things you can do to enhance and experiment with the focal point include:

- Using different angles
- Using the concept of depth of field to sharpen and blur
- Use motion control
• Choose background colors that add great contrast

Whatever you do, it's very important that your photo doesn't become too cluttered! Your focal point will shine through in the end result by following these tips.

Discovering New Angles

Many new photographers think that they should take photos with their subject dead-center.

This is boring!

You can capture much more interesting shots if you focus on different angles.

Some of the best pictures come as a result of something that wasn't expected by the viewer. Try filling the frame with your subject using a variety of different angles to add more interest.

To get new angles you can:

• Elevate yourself

• Get on your knees

• Lay on the ground

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● *Come at it from the side*

### Filling the Frame

There are too many people who take pictures of their subject that are just plain boring. These often include distracting backgrounds that do not compliment the subject at all. A great thing for you to do is to fill the frame with your subject instead.

Filling the frame means zooming in or moving in closer. You can now capture more details and compose your shots better -- the photograph as a whole will be better! When you combine this technique with shooting from new angles and using the rule of thirds, the results will be out of this world.

### Chapter Summary

Getting your composition right is the difference between an amateur and professional photograph. You need to understand the rule of thirds, using different angles, filling the frame, and choosing a good focal point.
PART FIVE: DIGITAL PHOTO EXTRAS

Free Windows Photo Editors

For the photographer that has a tight budget, it’s good to know that there are free resources out there! If you take digital photos, then you can use some great editing software that is absolutely free, made available by Windows.

Editing your pictures is a very important step in the photographic process, and can end up costing a pretty good amount of money by the time you are done. Anyone that needs to save money can take advantage of some great editing programs that are free and easy to use! Almost all digital cameras purchased today have a photo editing software program that comes as part of the purchase. These can provide simple cropping and picture modification.

One of the many free photo editors offered by Windows is Paint.net. It is offered by Washington State University. You can freely download this freeware and use it to edit your own digital photos. The software has a ton of really cool features, including special effects! It is easy to use and you can even log onto a user forum, if you should need any help or want to see how others are using this great freeware!

Another user-friendly freeware program that you can download to edit your photos is VCW VicMan’s Photo Editor. This freeware is similar to Adobe’s Photoshop. This software has a limited free version, but you can purchase the software for a great price. If you take a little time, you can find it offered at many online merchant websites and can even stumble across some great discounts!

This editor offers many of the common features any photo editor may need. There is a freeware photo editor called Image Forge Image Forge lets you paint and edit many of your photographic images. You can create some special effects and make one of a kind prints with Image Forge! With Image Forge, you can easily correct
any problems that you find with your digital photographs. Whether you want to touch up a person’s face, erase a tree or add stunning color, you can do it with this software.

If you want to instantly find and edit any and all of the pictures on your personal computer, there is no better tool to use than a freeware called Picasa! This program works to help you organize and sort through all of your digital pictures. You can make stunning photo collages and albums, as well as edit any problems you may have with any given picture. Picasa also allows you to create a photo “album” that you can send to a website to share pictures with your friends and family.

If you take pictures, especially digital, then you know how important it is to be able to edit. Whether you are a professional photographer or it is a hobby, you will want your pictures to be the best that they can be, right? Well, most photographers, novice and beginners alike, are not perfect. Therefore, they will not produce a perfect picture. The vast majority of the pictures taken will need to touched up in one way or another.

If you are looking to turn your pictures into pieces of art, there are many options available to you, as well. You can turn your print into a black and white picture and hand color some details. You can create beautiful special effects that will really make your digital photo stand out in a crowd, too.

As you can image, the tools to create the perfect picture can cost a lot of money, if you have to purchase them. If you are on a budget, or just like to save money, anything you can find for free is a bonus! Well, there are free photo editors out there, you just have to look for them. Since the introduction of the Internet, there are literally thousands upon thousands of pages of information that are geared specifically toward helping you achieve the pictures of your dreams.

You don’t have to spend one penny to edit your photographs. All you need is access to a computer and scanner and you are well on your way. Just log onto any one of the number of free photo editor applications available and a whole new world of editing possibilities will be right at your fingertips. Don’t let your money, or lack of, keep you from making the best pictures, just download some freeware and start editing your own pictures!
Another great free software is The Gimp. The opening paragraph on The Gimp.Org is the best way to describe this software “GIMP is the GNU Image Manipulation Program. It is a freely distributed piece of software for such tasks as photo retouching, image composition and image authoring. It works on many operating systems, in many languages.” Visit http://www.gimp.org/ and you will find more the just one free photo manipulation program but a wealth of free software applications to use with digital photos like Inkscape, Scribus, Blender and more.

**Chapter Summary**

Free Window's photo editors, such as Gimp, often come with higher learning curve than paid versions. Still, they are constantly updated and offer a great alternative to the more expensive Photoshop. Personally I recommend Adobe Elements if you’re new (it will do 90% of what you will probably ever need to do to your photos), and of course Adobe Photoshop if you want to be able to edit like the professionals do.

**More Than a Flash in the Pan**

Most experts will tell you what the automatic flash built into many digital cameras can’t do - change light angle, redirect off surfaces to soften the effect… but what is such a flash good at? As it turns out, there are a few times when such a feature is quite handy. While it can be handy to have dedicated lighting, or even a slave flash unit linked to your camera, there are good reasons why such items do not come standard with most cameras.

Fill flash (also known as “forced on” or “anytime” flash) is a feature found on most digital cameras that allows the user to trigger the built-in flash whenever a picture is taken - no matter the light level. This is handy when natural light is behind the subject, but also to fill in shadows anywhere in the frame. While your eye can see the detail in these shaded areas, often the camera cannot. Many outdoor pictures are spoiled by excessive shadow or loss of detail when natural light seems adequate to the eye.
For best results using fill flash, try to have your subject in shade with lit areas behind it. The fill flash takes care of the shade, and helps balance the light level so the subject and the background are clear and proportionately bright.

If your camera has a “slow synchronized flash” feature, this can be used to combine foreground and background elements in a way not otherwise possible (because of the short reach of small, built-in flashes). With the use of a tripod and relatively still subjects, good quality shots can be taken in otherwise difficult conditions, such as night shots or even shots on a moving platform. Longer shutter delays can produce blur effects similar to the “moving traffic” effects often seen in advertising, and with a little patient experimentation you can produce shots with a mid-range digital camera that rival expensive commercial art.

At the opposite end of the spectrum, you can take advantage of the extremely short duration of the flash in low-light situations. Flash firing time can be as short as 1/50,000 of a second, and while the camera’s CCD sensor will remain active longer than that, almost all of the light in a dark scene that reaches the CCD will be from that flash event. This can effectively “freeze” the action as if you were using a shutter speed faster than your camera can support.

Small built-in flash units have a very short “reach,” often providing effective light only as far as two or three meters. This weakness, however, can be turned into a strength if you think about how you want to compose your scene. Certainly for “isolating” or emphasizing your subject, the ability to move only a short distance from background objects and radically reduce their light level is handy.

In night shots outdoors or low-level indoor shots, the “weaker” flash gives more control over the content of the shot by dramatically reducing the “foreground” and magnifying the effect of distance.

Make sure to take advantage of the “red-eye reduction” feature of your camera, which fires a smaller flash a fraction of a second before the main flash to cause the subject’s pupils to contract. It’s amazing how many shots are taken with this feature present but turned off. When taking straight-on portrait shots using the built-in flash, there’s simply no reason to avoid this feature (unless you’re trying for glowing red pupils).
If you do decide to go with additional flash power, first make sure that your camera supports automatic communication with an external flash unit, and that the built-in flash can be turned off. The external flash can either attach to the camera itself or be attached by a cable (to allow greater flexibility of placement).

Even if your camera doesn’t support these features, you can use what is known as a “slave flash,” which is triggered by the light of the main flash on your camera. Though some units can connect to your camera, slave flashes are designed to be independent of the camera in terms of power, having their own batteries.

**Chapter Summary**

There are many different decisions to make when it comes to choosing your flash. While your camera comes standard with flash, you'll want to explore other options for more professional photographs.

**Cataloging Software**

Cataloging software applications is an image management program or package for albums, which means that you can categorize your photos stored on your computer, thus finding them with ease. Once your pictures are organized, they will be stored in a file cabinet and labeled accordingly. If you want to make adjustments the package often provides manipulation tools, however if you want max capabilities for achieving quality perfect pictures, you will need an image manipulator.

Digital photography is a growing industry where it seems everyone and his brother is out on the market to snap a shot. If you are one of those people in the market for photography, you might want to become acquainted with software applications, since you will be using them a lot. The programs come in all forms and most offer something different, however one of the most valuable tools photographers will employ is image-manipulation programs.

Application programs can help you reach the limited quality of imaging while printing your photos or adding them to web pages. Cataloguing software applications is one of
the few application programs that can enhance images in a slightly different method than imaging manipulating programs, i.e. this program organizes your images, which enhances your ability to find those photos with ease. Image-manipulation is another of the software applications available that enables you to change your images at leisure.

**Image-manipulation programs**

With some programs you can crop, convert, add color, change colors, change size, enhance, manipulate and more. One of the choice programs is Adobe Photoshop, however if you are low on cash, and amateur in the field of photography, you may want to look into other programs that offer similar features, like the newer Adobe Elements (I very highly recommend both).

One of the things I like about Adobe, which other manipulating programs will do also, is that you can blur images, blow up the images, and create 3D images and more. I had fun blowing up my sister-n-law making her look three times the size she actually once. Not that she needed additional weight or anything. She sort of looked like a large balloon. Anyway, that is my entertainment, but you can also design book covers and more with these programs.

Other types of software programs include Rescue, Website Creation, specialist, and DVD software for view. Most of these programs are marketed for a variety of reasons outside of photography, however many photographers will employ these programs.

Rescue programs for images are valuable tools, since if you loose your pictures or images; these programs will recover the files by scanning all areas selected.

DVD viewers are a CD burner so to speak. This viewer enables you to burn your images to a DVD and watch them on a VHS or DVD player. This gives a person the upper edge, since what you may miss on a computer you will see live in color on a television screen.

Specialist software’s are programs that enable you to create calendars, business cards, and the like. These are also handy for promotional purposes.
Website Creation is invaluable at the moment. The programs enable you to walk through a series of steps to create your own website. If you ever paid for web hosting, you know that the prices are costly. Each month you will pay around $50 to keep the site up and running. Why not take the cheaper route and create your own designs.

**Tip:** Always search for versatile programs, since these programs often have more to offer. You also want to consider power while thinking image-manipulation software. Anytime you purchase quality, most times you will receive quality and quantity in return. Now we are ready to use tool for manipulating images.

**Chapter Summary**

Rescue, Website Creation, specialist, and DVD software for view are all excellent image manipulation programs.

**Digital Photography Software Manipulating Tools**

Okay, now you have purchased the image-manipulation programs for enhancing those images. Possibly, you bought one of the most sophisticated programs available (like Adobe Photoshop or it’s little brother Adobe Elements), which has tons of options to choose from. So, you are just starting out in photography and have never used these programs before. In front of your computer screen is an open windowpane, and in that pane, it is requesting you to type in a command. What do I choose?

Some of the tools offered in the program includes, Crop, Layers, Clone, Exposure, Unsharp Mask, Blur, Color, Desaturation, and so forth. If you are seeing these tools, you want to take carefully notes, since many photographers will employ all of these tools on a single image before completing a task.

I remember the first time I opened up Adobe Photoshop and saw such tools. My first expression was, *somebody get me out of here!* Well, nobody came so I ventured off to see where it would go, and low in behold; I was in love.
These image-manipulating programs are so fascinating that it will blow your mind. Therefore, to un-blown your mind we will offer you a few tips to help you along your journey of manipulating those images.

**Crop**

Crop is one of the most frequently employed tools in image-manipulating programs. This feature is utilized to cut out areas of an image or picture that you do not want others to see. For example, if you snapped a shot of a mate and in the background is a detailed view of your home area, you can use crop and come up with your mate in the picture only. You can use other features in certain programs to add colorful backgrounds also. This feature also enables you to speed up the process of image printing, since it will decrease the size of the images. You can save computer hard drive space with this handy buddy.

**Layers**

Layers enable you to create multiple copies of one image so to speak. You can alter, manipulate, adjust, crop and so forth but choosing layers will enable you to keep the original image or photo untouched. Imagine that, you can change a picture without touching it. Go figure!

**Clone**

This is when you want more than one. Just kidding: This feature enables you to take out elements that you do not want in the pictures; rather you can remove entire parts of a picture or the dusty areas in sections. The Clone tool will work with the frame through a clone process and transfer the image. You will need to learn more about the brushes used in these programs, since it plays a part in cloning. The clone will employ a brush to move objects and remove areas of a photo through a *backdrop* result.
Blur

Blur is not what it seems. You can use this tool to blur out backgrounds that you don’t want in an image. Like crop, you can do pretty much the same thing with this feature. One of the most common blurs that photographers will use is the Gaussian.

Adjusting tools include the Exposure, Color, and Desaturation. Using these tools, you can get a sound picture in color.

Exposure

Exposure has a couple of different selections, or levels if you will. You can use Curves or Levels in the menu to manipulate images. The tools are confusing, however levels is one of the most popular since it can be employed with ease. With this tool you can tone, shadow or highlight images. With the Curves tool, you can alter the lines or change the shapes of images, yet this is a more complex tool to employ.

Color

You can use Color to increase the brightness or decrease the brightness within an image. You can manipulate the photo, changing the colors to any desired effect.

Desaturation

You want to be careful while using this feature, however if you intend to change the entire colors in a picture, this is the option to select, since it converts the images to black and white. You want to learn the Color Tools before considering
this option, especially if you are not familiar with the programs. The Color tool will enable you to retouch the photo with colorful scenery. Now we can move back to cameras to review what types are best suited for your needs.

**Chapter Summary**

Becoming familiar with photo manipulation software is great since you can really edit your photos to perfection. You can crop, adjust and add layers, blur, change the exposure, use desaturation, and adjust the colors.

**The State of Memory Cards**

The good news in the world of memory cards for digital photography is that new media is cheaper, faster, and more readily available than ever. The abundance of choices means you can always find a method of storage that fits your needs and budget, and you’ll likely not end up with a camera that you can’t find storage media for.

Most of the time you choose your memory card based on which camera you have, and then you’re more interested in size and brand than technology. When you’re shopping for a new camera, however, you want to take memory type into account.

That being said, here’s the latest news on the available choices:

**Multi-Media Cards (MMC)** are definitely worth looking out for. Developed as a royalty-free standard, anyone can make the cards or the devices that support them. As an added advantage, the full-size MMC cards can be used in SD card slots. As a disadvantage, the standard is growing - in the sense that there are now five versions of the MMC standard with different sizes, voltages and features, in use. So watch your eBay purchases carefully. Available in sizes up to 2 Gigabytes.
Secure Digital (SD) cards were designed to replace the older MMC standard - but it’s beginning to look like the reverse may happen. The good news is that SD cards are available in larger sized - up to 4 Gigabytes, and higher speeds than MMC cards currently are. In theory, SD cards are the fastest on the market. In practice, it’s almost a dead heat with Compact Flash cards. The bad news is that SD cards are losing market share rapidly, though they are still used in many cameras. The better news is that if the MMC standard takes over, full-size MMC cards can be used in SD slots.

Compact Flash (CF) is one of the oldest and most popular standards available today. They have the widest range of sizes (up to 8 Gigabytes with larger microdrive-based cards rumored) and are quite quick. New developments in wireless transfer support for cameras and links to external drive packs may cement CF cards’ place.

Memory Sticks are used only in Sony products, and Sony is serious about keeping the technology in use. Unfortunately it seems like no one else is. They’re available up to 4 Gigabytes in capacity, have good speed, but if you’re using a Memory stick, it’s probably because you’re using a Sony camera and you don’t have a choice.

The newest common storage media are xD-Picture cards. Developed by Olympus and Fuji as a replacement for the older Smart Media cards, xD cards are compact and durable, with a heftier shell than older designs. They are stable in the market and likely to be around for a while, but they are gaining neither market share nor size rapidly - currently the largest xD cards are 1 Gigabyte. This is probably because only Olympus and Fuji now use this standard.

Wide and wafer-thin, Smart Media cards define “legacy technology.” Available only as large as 128 Megabytes, this is one technology I would have expected to have been “voted off the island” by now. Alas, they were used in tens if not hundreds of millions of cameras and smart phones, so they are still being made and will be available for some time. You won’t find them in any new cameras, however.
PCMCIA or “PC Card” memory is used in very few, high-end cameras. Its old advantage, storage size, has been quashed by the growth of Compact Flash cards, making it another legacy technology. They are physically the largest storage format, and are available up to 4 Gigabytes, though that large size would be a microdrive (like the larger compact flash cards) and thus draw more power. The only hope for the standard is the use of wireless PCMCIA cards or interfaces to external drives, but that development seems to have been shifted to the Compact Flash card.

In short, choosing a high-end camera, I’d pick Compact Flash. For midrange or lower-end cameras, it’s still a battle between SD and MMC formats.

Chapter Summary

Your camera will have a specific memory card that it accepts. It might be one of the following:

- *Multi Media Cards*
- *Secure Digital*
- *Compact Flash*
- *Memory Sticks*
- *XD Picture Cards*
- *Smart Media*
- *PC Card*
Important Equipment for Traveling with Your Digital Camera

Digital photography is a fast growing industry. Today, technology is making it possible to do nearly anything you want with photos, by using software, quality cameras, accessories and more. Starting with accessories, we will consider a few items that may help you along your journey in photography. Personally, I employ journey often while writing about photography, since it all respects photography is a journey, adventure, experience, creation and more rolled into one goal.

Few of the accessories available to photographers or potentials are the lens attachments. You can purchase a converter attachment to give you a wider look at the picture in consideration. Some attachments work like a telescope and are designed to fit the telescopic lens. Cradles are dock stations. Similar to a ship at a dock, the passengers either board or get off board the ship, the dock station for cameras enable you to load your photos onto the dock reducing the stress of transferring while charging the battery life at the same time. What a valuable accessory.

Direct printing is preferred, i.e. some cameras now will enable you to attach the camera directly to the printer and print the images stored on the device. What a handy gadget.

Battery choice is also important while considering life. If you don’t purchase the right battery accessories, your photography career may blunder. Lithium-ion batteries are often the choice batteries employed today.

Well now, we consider a few accessories; let’s move on to cameras since both accessories and cameras combine. We spoke earlier in different chapters regarding flashguns; however, I will bring this up once more. Come cameras have hot-shoes which enable the user to connect to a flashgun which will enhance photo take.

There are not many people that don’t like to travel. The vast majority of people that travel will want to take pictures while they are away. The most convenient type of camera on the market today is the digital camera. With a digital camera, you won’t have to spend a lot of money for film and processing and you can even see the pictures
the minute that you shoot them. If there is a frame that you don’t like, simply erase it and start over!

If you are traveling with your digital camera, it is important to protect the camera from damage, and to make things easier for you to carry. There are many different travel accessories made for the many various digital cameras on the market. Some are very inexpensive and others many not be, so you will need to use your judgment when it is time to choose just what you need.

Not only does the proper equipment help to protect your digital camera, it will also help you to make the most of your picture taking experience. Some items can be used to make things easier on you, like a tripod, and others will help to increase the size of images in a photo, like a lens.

One of the most basic accessories to buy for your digital camera is a carrying case/bag. It will help to protect your camera, while serving as storage space, too.

A lot of photographers use multiple bags, as there may be more equipment than will fit into just one bag. You can find a travel case for your digital camera in many sizes and shapes, as well as different materials and prices. Some are small enough to fit into your hand and others are as large as backpacks. The size you may require will be based on your personal preference and requirements.

A digital camera doesn’t work with traditional film, so you will also need memory cards to record and save your pictures. It is important that if you are traveling, that you have more than one card; you never know what may happen and it is better to play it safe in this department! There is nothing worse than wanting to take a picture, but not having enough memory to record it. You also never know when a memory card may malfunction or get lost, so it’s just best to take more than one.
Another essential accessory for traveling with your digital camera is a tripod. A tripod can help to free your hands when taking a picture. It can also help to keep your camera steady. Also, if you happen to what to be in a picture, you can be, if you use a tripod to hold your camera. The tripods are available in many sizes and materials. They are also found in different price ranges. The best way to find a tripod that matches your weight, size and price requirements is to test a few on for size before you make a purchase.

Whether you are traveling across the city or across the world, you will have better photograph taking experiences when you have a few accessories. You don’t have to spend a lot of money on them and if you look around, you can probably find discounted or pre-owned accessories that will work for you.

When you are traveling, the last thing you want to do is to be stressed out over taking pictures. Photography is supposed to be an enjoyment and not a chore, so make it easier on yourself and take advantage of the many accessories that are available. If you don’t take extra memory cards, you may run out of storage space. If you want to free your hands, get a tripod. In order to protect the body and lenses of your digital camera, use a case or bag. All of these accessories are available for just about every model of digital camera available, so you will be able to find them somewhere.

**Chapter Summary**

There are an incredible number of different accessories available for your digital camera. These range from something as simple as extra batteries to tripods to travel bags. You'll start to figure out which accessories you need as you become more accustomed to photography.
Recharge Your Knowledge of Batteries

When rechargeable batteries became generally available, the cost of using portable electronics went down considerably. Now, that savings seems like a fact of life, but by remembering a few things about batteries, you can save even more.

New rechargeable batteries should be partially charged (in fact, mostly charged) when you buy them - but that doesn’t mean they’re ready for use. Manufacturer’s generally recommend full charging before use, and some experienced users report that two or three full charge-discharge cycles before first use makes for the longest possible run time per charge.

Temperature has some odd effects on batteries - for long-term storage the rumors are true: it is best to keep batteries cold, even frozen, to slow the gradual discharge that occurs in all batteries and keep them fresh. Think of batteries as an animal that can hibernate - the cold slows the “metabolism” of the battery.

Ironically, while cold prolongs the life of the battery, the cold, “slow” battery isn’t much good for use - the same process that slows the natural discharge of the battery slows the normal discharge during use, allowing the voltage to drop below usable levels even quicker. So, for batteries that are about to be used, warm storage (for example in a shirt pocket as opposed to a camera bag) speeds up the “metabolism” of the battery and keeps voltage higher longer - giving you more battery life.

Common rechargeable batteries that lose a little power a day (often self-discharging in a month) can hold over 90% of their charge for several months if kept frozen.

So, long-term cold, short-term warm: Just don’t give in to temptation when pulling those batteries from the freezer at the last moment and microwave them to get them in shape - that’s a story with a sad, sad ending, as if you’re very lucky the battery’s chemical storage mechanism will be broken down and the battery ruined.

If you’re not lucky, you could burn your house down when the battery explodes. You
may have recalled hearing somewhere about recharging batteries with microwaves - NASA has worked on exotic batteries recharged by directed microwaves, but both the battery and the microwave are very different from what you have at home.

Be sure to store frozen batteries in sealed bags to keep moisture away, and let keep them sealed until they reach room temperature to avoid condensation. Even so, it’s a good idea to wipe off the batteries with a paper towel before packing up for your shoot, just to catch any residual moisture.

The LCD display panel on most digital cameras draws a surprising amount of energy. If you’re not using it, turn it off and use the viewfinder (though this doesn’t work well for close-up “macro” shots). If you have to use the viewfinder and camera controls allow it, turn down the brightness of the LCD.

To save even more power, you can turn off the auto-focus feature of your camera and use the half-shutter feature to set the focus. When your camera is set to auto-focus and is left on, the camera refocuses the lens every time you point the camera somewhere new - which can mean a lot of energy spent spinning the lens!

Cleanliness can save you energy: Clean the battery contacts in your camera and charger with rubbing alcohol and a cotton swab. Rapid corrosion is often associated with electrical systems, and it doesn’t have to be visible to reduce efficiency. Visible corrosion on batteries usually marks the end of their life, but sometimes a gentle cleaning of the contacts on rechargeable batteries can extend their use, especially more sophisticated “packaged” lithium-ion batteries.

If you’re an organization fanatic, consider marking your batteries (in groups like “teams”) and keeping track of how many times they’ve been charged and used. Even an approximate track of usage can keep you from taking near-death batteries on a long trip and having to find an alternate supply far from home.

A little knowledge goes a long way, and if you use even part of this advice, you can save money and extend your shooting sessions. In other words, take care of your batteries and they’ll take care of you.
Chapter Summary

Running out of battery power is no good! You need to buy the right kind of batteries for your camera, and take care of them properly.

Turning Digital Photography into a Moneymaker

Are you one of those amateur photographers that were convinced by a savvy salesperson to purchase one of the more expensive digital cameras on the market?

You fondly remember the sales pitch, which took you from a small convenient mini camera model to a sophisticated 10 mega pixel model with a 35 mm sensor and noise reduction features including movement absorption for tracking the action at a sports event.

You decided to spend a little extra for extended memory to accommodate video clips . . . and for the long-term warranty . . . just in case. You justified the extra $200 because well the flash element was better on this camera. The lens and built in filters provide you numerous options in setting up optimum image capture. Now, the challenge is to pay for the state-of-the-art camera and peripheral print studio you invested in.

We want to provide you some options that will put you and your high-tech partner to work that will assure it pays for itself and more.

Photographing Works of Art

While many consider themselves amateurs when it comes to taking artistic photographs, with a little study and an independent experimentation, most anyone with persistence could quickly become an expert in photographing works of art. What is the market for such a skill? With the Internet and e-mail the market for photographing works of art is growing by leaps and bounds.
Those artists that have made it to the level of giving exhibits around the nation need excellent pictorial representations of their artwork to market to various galleries. The greater exposure they enjoy the more art they will sell.

Museums are another market in the field of photographing pieces of art or historic artifacts. Museum artifact photography takes a serious and studied approach with a bit of artistic flare to assure the object or artwork is fully represented.

Less artistic perhaps, but equally important are those thousands of people that need photographs taken of various objects from homes to cars to whatever they might be selling on E-bay this week. You can advertise right on E-bay to test the market.

The fact is that many people simply don't have the time, the excellent camera you have just invested in or the inclination to take the type of photograph that will instantly sell their product on the Internet. Why just stick with Internet photography? How many magazines exist in the worlds that are filled with photographs of everything imaginable from office desks to floral arrangements? That is another market of clients waiting to discover you.

**Structural Photography**

If you are like many digital photographers, when you have a camera handy you naturally take photographs of buildings. The most prominent market for structural photography is the real estate industry. How many real estate agents are in your community? Send about twenty of them a flyer and within a month, you will likely have a job or two taking photographs of real estate that is for sell. If you have a friend that is a pilot, you can expand your market with aerial photography of buildings, property and potential development sites. Real Estate Agents, architects, land planners and developers will love you for your expertise.

One company sends sales people from one farm to another with an aerial photograph of their home in hand. There are few homeowners that will turn down a readily available heirloom photograph of their land unless they already have one. One other important market is to take photographs of buildings for insurance companies or architects who
have just created an award-winning design of a life-time.

With your digital capture versatility, editing capabilities and print studio, you will find a variety of documentation needs professionally and artistically. Your editing studio may also include the tools to edit historic photographs. Thereby you could provide a building owner with an historic series of photographs of their buildings.

**Digital Photo-Journalism Expounding on Daily Life**

Another of my favorite types of photography is *photo-journalism*. There is nothing more satisfying than having a camera at a community event, historic hearing, sports event or reunion. If you enjoy chatting with people and helping people preserve memorable events, you will be a natural for this type of photography.

The bottom-line is if you have the photo and the story enough times, you will eventually get those front page articles. Try the small town and neighborhood newspapers to build your reputation. Don't limit yourself to newspapers. With video clips as an option, you can provide cutting-edge documentation of special events for an evening television news story. A quality camera eye will win over.

**Stock Photo Sites**

With the capability to capture in RAW and instantly display in JPG, you may want to provide a full-color JPEG view on the Internet of the photographs you have archived in RAW. You could sell and or provide free use of some of your photographs to others. From art gallery quality presentations to free Internet gifs, there are many ways to share your photographs for fun and for money.

The Internet is filling up with high quality stock photography sites that allow the amateur to the professional photographer ability to submit images for sale. These sites often offer royalty–free images that graphic designers for print; webmasters, and all photography buyers do not have to pay any additional fees on any subsequent usage of.
the images. Commercial and non-commercial designers can use the photos or digi art you submit for many different types of projects.

When selling a royalty-free photo, a photographer allows an image buyer unlimited use of the photo or illustration, including any photo manipulations such as, but not limited to cropping, using filters, color enhancements, etc. Photographer remains a copyright owner of the photography or illustration.

Stockxpert a stock photography website says when selecting some of your pictures to upload to Stockxpert, you should keep in mind that this is a stock image archive, not a personal gallery, thus we look at your work a bit differently. We are looking for photos that are creative, interesting and useful at the same time. They should be large, sharp and properly lit. Good composition and good quality is a must.

Along with Stockxpert’s advice try this pointer to help your images sell on a stock site is if anyone with a digital camera can relatively easily take a image of a certain subject, stock sites most likely already have a lot of that type of photo, so if you want your photos to really stick out in the crowd of images try not to take to many photos of these type of things water, flowers and nature, oceans and beaches, flowers and trees, landscapes, sunsets and beaches, clouds and skies, birds and pets.

Chapter Summary

You can turn this fun hobby into a career or business! Photo Journalism, stock websites, photographing works of art and structural photography offer great options if you decide this is the right path for you.
Conclusion

This is a lot of information, but hopefully you'll be able to go through and reference this book if you get stuck or have a photography question.

My goal in creating this book was to take you all the way from the very beginning stages, right through to being an excellent intermediate photographer.

This is by no means the end of your photography education, but you're well on your way to taking the kind of photos you've always longed to take.

Thank you to the photographers who allowed us to use the images within this book.
PART SIX: DIGITAL PHOTOGRAPHY
RECOMMENDED RESOURCES

Photoshop And Elements Resources

Photo Editing With Elements

Elements according to Adobe is one of the most powerful editing pieces of software on the market today. When it comes to “Digital Photography” Photoshop Elements is literally the best on the market.

So if your after altering your Digital Photos then “Learn Elements Now” is just what you need.

With “Learn Elements Now” they show you how to manipulate digital images, restore photographs, as well as create digital art work from scratch infact Learn Elements Now has 30 excellent online videos tutorials showing you all you need to know to become an expert in altering Digital Photos.

Click Here To Read More On This Amazing Online Adobe Elements Tutorial System: www.learnelementsnow.com
Learn Photoshop Basics

Attention! Now adobe Photoshop will not be as difficult as it was because this ultimate guide will provide you the tips and very useful facts about adobe Photoshop.

You can go through the easy to follow video tutorial and start creating beautiful Photoshop graphics in just 2 hours. This guide will provide you the tips which can be easily followed by you and thats it you can also become a expert Photoshop user.

Just 2 hours from the time you got it and you will be able to produce your own graphics quickly, easily, and completely stress free.

Now it is very easy to learn Photoshop just order it now to download these video or just see them online. So, dont waste time and your money in other products but order this nice and very reasonable Photoshop guide.

Click Here To Read More On This Amazing Online Photoshop Tutorial System: www.learnphotoshopnow.com
Photo Editing With Photoshop

How many times have you taken what you thought was a great digital photo only to be disappointed once you looked at it on your computer?

Well at last David Peters has produced something which is truly amazing. "Edit Your Digital Photos" is a simple and very effective training tool that shows you the shortcuts to editing your digital photos in minutes.

Edit Your Digital Photos brings you 22 photo-editing videos, all of which are less than 13 minutes long and designed for Photoshop user’s.

So if you’d like to edit your digital photos with the help of one of the very best in the Photoshop field then these online tutorials are just what you need.

Whether it's creating a cool montage or removing unwanted background objects from your photos David has everything like this covered. This has to be the number one piece of editing tutorial system on the Internet today.

Click Here To Read More On “Edit Your Digital Photos” Online Tutorial System: www.edityourdigitalphotos.com
**Ongoing Photoshop Training:**

Finally, a way to radically shorten and even eliminate the Photoshop learning curve introducing “Photoshop Fast Track Elite”.

Photoshop Fast Track Elite is a monthly online Photoshop tutorial training program.

All of the online tutorials are hands on - as if I were by your side teaching you step by step what to do and how to do it. And the majority of the videos are less than 10 minutes in length (no fluff or time wasting!).

As a member of Photoshop Fast Track Elite you’ll be taught the latest and coolest Photoshop tricks of the trade. Your education will be ongoing and fun!

If there's a shortcut available you'll learn it. Your learning curve will disappear like snow on a hot summer's day.

Not only is membership in "Photoshop Fast Track Elite" affordable, you can even try it FREE for the first 30 days.

This is one not to be missed!

Click Here To Read More On This Incredible Online Monthly Photoshop Tutorial Membership: [www.photoshopfasttrack.com/psft](http://www.photoshopfasttrack.com/psft)
How To Make Money With Your Digital Camera

Turn Your Photos Into Cash

If you can take a simple picture, then you can rake in a pile of cash.

Dan has produced something which is truly amazing "Turn Your Photos Into Cash".

You don’t need any fancy equipment, you don’t need to have a website or technical skill, you don’t even need any experience all you need digital camera, a computer and an internet connection to get started making hundreds to thousands every month! It’s that simple.

So if you’d like to make some extra money with those unwanted photos then make sure you take a look at “Turn Your Photos Into Cash”

This has to be the number one home based business for making money online.

Click Here To Read More On “Turn Your Photos Into Cash” Home Study Course:
www.turnyourphotosintocash.com