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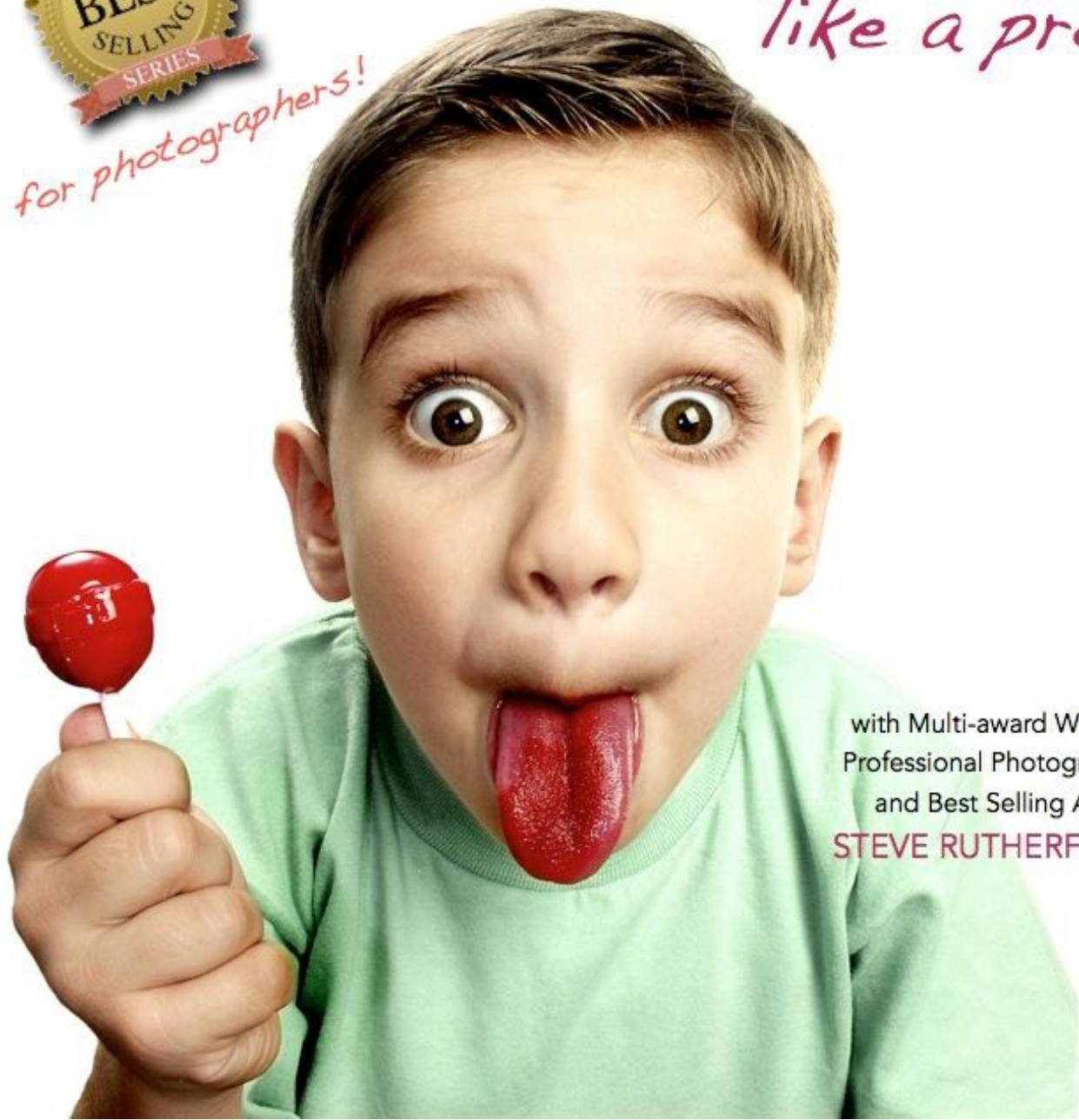
# PHOTOGRAPH

YOUR KIDS

*like a pro!*



*for photographers!*



with Multi-award Winning  
Professional Photographer  
and Best Selling Author  
**STEVE RUTHERFORD**

# HOW TO PHOTOGRAPH YOUR KIDS LIKE A PRO

With Multi-Award Winning  
Professional Photographer

**STEVE RUTHERFORD**

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**RUTHERFORD**  
INTERNATIONAL PHOTOGRAPHER

Praise from photography students taught by Internationally Awarded and Accredited Australian Pro Photographer Steve Rutherford who has been teaching photography for over a decade.

**“WOW, great training, so much content, wish I had done this earlier, thanks for your local advice too, Steve”**

*Heather Francini, Auckland NZ*

**“If you want to take your photography to the next level you have to discover photography with Steve Rutherford”**

*Dave Phillips, Mackay (davephillips.com.au)*

**“Hi Steve, Brilliant content....what a way to learn, now I know spending the \$\$ on my camera was worth it...thanks so much.”**

*Tracey Woolstock, Darwin, NT*

**“Hey Steve, Thanks a million for your help I have over 400 images from my holiday to work on, I’m on it, Cheers”**

*Sandra Marks, Brisbane, QLD*

**“I haven’t come across a better way to learn how to capture images in any situation, than this training”**

*Michael Pollock, Atherton QLD*

**“Enjoyable, casual approach, awesome content.”**

*Pam Whyte, Cairns QLD - The Boutique Collection*

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# ACKNOWLEDGEMENTS

Ah... books. What a wonderful resource at the end of our fingertips. Often it takes many people to bring a single book together, and often a seriously large team to bring a series of books together. A wise man once said, *“the heights of success are not climbed by oneself, rather with others holding the ladder with you”*, implying a team of mentors and helpers, is what drives you towards success, not the efforts of the “lone ranger” There are a few people that have helped bring this first set of books in the “How to Photograph Anything” Series together, and they are to be acknowledged for their support, ideas, tenacious critique and selfless assistance.

Firstly, to my wife and intimate personal mentor, Tanya, thank you for your assistance, love, drive and commitment, in bringing this project to life. I love you very dearly. I’d also like to thank my friend and best selling author and entrepreneur, Andrew Griffiths. You have well and truly aided me in many areas of business, marketing and the importance of personal relationships. I can’t thank you enough for your friendship. To the contributors and photographers, who assisted in this compilation of content in this series of books, thank you also.

Finally I am deeply thankful to the multitudes of attendees at my photography training seminars, in Australia, and those readers of our magazine, Photographic Fanatic Magazine, for your continued support. Without each of you there would be no point in teaching people the passion of photography.

# ABOUT THE AUTHOR

## STEVE RUTHERFORD



Australian Photographer, and Editor of Photographic Fanatic Magazine, Steve Rutherford is regarded as a reputable name in the international photographic world. With a multitude of Australian and International awards, high demand for his creative vision in fine art, and hundreds seeking his training courses and seminars, he is clearly a photographer on the move.

Previously a high level manager within the Australian Federal Police and a Prison Officer with the notorious Long Bay Prison's Riot and Emergency Response Squad in Sydney, Steve Rutherford's background has been as diverse as the images he captures. There is no doubt that any person with this past has seen both the best and the worst that humanity can be. Steve uses this experience when adding his own unique perspective to the world. Such a perspective can expose the story of a single floating leaf on a tropical island paradise, or the grandeur of midnight in New York.

Steve Rutherford is accredited and registered as an award winning professional photographer by the AIPP (Australian Institute of Professional Photography), and the PPA (Professional Photographers of America) having accumulated over 50 International and National awards so far. Steve is also qualified as an Associate of Photography with the AIPP and NZIPP (New Zealand Institute of Professional Photography), and was past President of the N. QLD Chapter of the AIPP

Steve Rutherford travels extensively, both for commercial clients and to collect images for his own fine art library. He has photographed extensively around Australia, NZ, Vanuatu, New Caledonia, Indonesia, Hawaii, mainland USA, Alaska and Canada. He is also represented by In Transit Images in Montreal, Canada. Visit – [www.steverutherford.com.au](http://www.steverutherford.com.au)



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GLOSSARY

# What you'll discover in this book..

## “How to Photograph Your Kids like a Pro”

As proud parents we all want professional looking photos of our kids. But it is often difficult to find easy step by step instructions on the secrets to taking these professional quality photos. This book “How to Photograph your Kids like a Pro” will unveil the secrets pro's use so you can take your own professional photos with ease. In this book you'll discover:

- The ***No. 1 SECRET*** pro photographers use to get the WOW factor every time.
- The tricks and techniques pro photographers use for every shot.
- Which camera will turn your shots from amateur to professional?
- How to save time and money using the right equipment.
- How to turn your photography passion and creativity into a BIG \$ income.

Finding the best resource to better your photographic skills can often be like looking for a needle in a haystack, but the “How to Photograph Anything like a Pro” Book Series, has been built to GIVE YOU the very best tools and step by step resources to help you take great photos. Internationally Awarded and accredited Australian Pro Photographer Steve Rutherford has been teaching photography for nearly a decade and has a genuine ability to explain photography techniques in simple easy to understand practical terms. For just the cost of a coffee, Steve has now captured all these secret techniques and tips in this easy to follow affordable Photography Book Series. Make sure you also claim your free gift at the end of the book (before the glossary)!

Photography is a way of seeing the world and capturing your memories; it's also the most popular hobby on the planet. Some say great photos can only be created by a photographer, who has mastered the broad technical and aesthetic challenges that require quick decisions about shutter speed, aperture, ISO, composition, focal length, gesture, and the precise moment of exposure when capturing a photograph. But with the “How to Photograph Anything like a Pro” book series, these decisions become instinctual through the easy step by step instruction provided by Steve Rutherford, an award-winning industry professional.

While you may want to still go to a studio for certain special occasions, you might quickly realize you can do a lot yourself with the step by step guidance of this book. With a little practice and the right equipment you can do everything the pros do. The added benefit, you get perfect photos all the time to capture your photographic memories to last generations. Enjoy the book.





# WHAT EQUIPMENT DO I NEED?

It might seem simple, a camera, a lens and a flash, right? Not so much. There are reasons people are drawn to the work of professional photographers. Basically the depth of the image, the specificity of the atmosphere and the overall look is what pops out and makes an image look more than just a point and shoot job. Framing the photo and proper lighting has much to do with how your images will end up, but most importantly you need to begin with the right equipment. This is a basic list, something you can alter to deal with your own budgetary limitations as well as what you plan to do with your camera.

## ***Great Camera Body***

First you need a great camera body. This is one allowing you to go to fully manual settings, the ability to change the ISO and the F-Stop to whatever is appropriate for your shot. You also need to make sure your body allows you to change out your lenses at will. You don't want a camera body that has a lens that is permanent, this is the difference between a great camera (SLR) and a point and shoot camera.

There are many brands out there making great camera bodies with lots of options. The two most popular tend to be the Canon and the Nikon. These continue to grow in usability as the cameras have crossed over from still shooting to full video production. The video system on these cameras allow you to take video and still shots in such high quality you can even pull still images from your video. This is something that will be covered later, but it is a great option, especially when you are doing action shots.

## ***Lenses, Many to Choose From and You Want a Variety***

For the uneducated photographer, you might not realize a zoom lens cannot handle everything you are looking for. Everyone has gotten used to the zoom lenses included in cameras and while these do help you get close up to things you are far from, the lens does not give you as much control over your focal point and what your background is going to look like. You want to make sure you have a variety of lenses so you can get exactly what you are looking for with every shot.

## ***Telephoto Zoom Lens***

A normal telephoto zoom lens is great for distances and might be what you need when it comes to taking action shots out on the soccer field or while you are out on the lake. This gives you the chance to take photos up close and far away. The focal length is chosen by the lens and you will have a crisp center subject and much of the rest of the image will be in focus as well. This is not the best for portraits but works nicely when you are taking action shots, you can compare them to the sports pages of newspapers and magazines.

## ***Tripod and Monopod***

Tripods are a common accessory for cameras. These help to keep the camera steady and on

point both in the studio and out in the field. While many people think about tripods so they can use the self-timer to take a group shot, they also help to steady the camera when you are taking shots on long lenses or you are taking action shots. Tripods also allow you to set up the camera at angles not good for standing or sitting with the camera. You can take images pointing down or from low angles for photos on the field. These interesting angles help to add a professional appearance to your shots. You often free up your hands by using a tripod, giving you the chance to entertain a child or rearrange your subjects with hand gestures and directions.

Newer are monopods. These small little devices allowing you to wander around with the camera on a stick, it gives you a new type of stability. It gives you a different angle on certain shots as well as the ability to hold the camera steady for a long period of time, giving your arms rest.

### ***Remote Capture***

There are a few types of remote capture buttons on the market. These buttons used to require a wire going back to the camera (known as tethering), but now, can be a wireless remote trigger. This gives you the chance to work with a child while pushing the small button in your hand. This is yet another great example of why a tripod is so necessary to get the right shot, as you don't have to be anywhere near your camera.

With small babies especially, this allows you to stay close enough to the child to get the shot you want without putting the baby in danger of falling or slipping off to one side or another. You, as the photographer, will always be just out of frame. If you catch yourself by accident, you can simply digitally crop yourself out of the photo. Remote capture is a must have for any serious portrait photographer.

### ***Wide Angle Lens***

Wide-angle lenses often are thought of when it comes to sweeping landscapes. People think of it as a way to get a massive area in the shot. What you may not realize is it is also good with big groups of people. From certain angles you can take in an entire room, which gives you a great sense of the setting. Another great thing about a wide-angle lens is you can add a sense of size to the photo. This is a way to make a child look even smaller on a massive background. This is the perfect marriage between portrait photography that everyone has seen and a unique shot that will pop out to viewers as truly one of a kind.

### ***Wide Angle Zoom Lens***

A wide-angle zoom is another way to go. If you are working outside of your studio or home often, you need a way to combine some of your lenses unless you have your own personal Sherpa to carry your photography equipment. There are so many things to consider when you are taking photos out and about that you want to have a few lenses that will cover everything. The wide-angle zoom does just that. It gives you the ability to pull in closer while still getting more of the surroundings. Often shots taken with this type of lens are the ones you will crop to be exactly what you are looking for. Getting more of the area rather than accidentally cutting off part of the image is much more important.

## ***Image Stabilized Telephoto Zoom***

Telephoto zoom might not seem like something you need for children and life, but think of it differently. If you are at an amusement park and you want the perfect photo of your kid's face as they ride the ride, this is the lens for you. By getting the image stabilized telephoto zoom, you can get pretty tight on your subjects without having to set up a tripod. This is also a great way to get shots on the field or in the ocean or anywhere else where you might not be right next to the child.

In the studio it can also be helpful. While a regular zoom might work, you can play a little more with light on the telephoto zoom. You can get that close face shot without having to be right in the child's face. This usually gets you a much more natural reaction than pulling in too close, personal space is important.

## ***2 or 3 Fast Prime Lenses, Small, Light and Easy to Travel With***

A prime lens has a fixed focal length and is meant specifically for that depth of field. Of course you can still adjust the speed and use it more creatively, but these lenses are designed specifically to deal with the focal length in order to produce the least amount of distortion via the glass for that distance. It also allows you to know exactly what kind of light you require to get the best image possible out of a prime lens. A few prime lenses are great and fairly easy to travel with. This is something that works well if you plan to do shots in various locations but you are going to have control over where you set up your tripod and how you get your shots. You will likely want at least two to choose from in order to fully experience the background/setting where you are taking the portraits.

## ***Flashes***

Flashes are very important to get the final results of a professional photographer. The truth is, the flash that comes on most cameras does not really do justice to what you are shooting. The direct, bright light tends to wash out color and make funny shadows or very flat images. While it is great if you are just in a point-and-shoot mode, it will not get you the results you want. Even if you are using a point-and-shoot type camera, you should try to not use the flash and rather extend your shutter speed in order to get a more accurate representation of what you are photographing.

You will want to get a variety of lights to work with in the studio and outside the studio. There are all sorts of "heats" when you are looking at lights and these will produce brighter, more harsh looks. But you can tone many of these down with certain bounce cards and other photographic tools. You will want a few bright lights so that when you need to feed in more light you can, but you will diffuse it so it does not wash out your subject or the scenery.



Shoe mounted flashes are the ones that can be connected directly to your camera. When it comes to a flash that is in tune with your camera and attached these are the best. You can usually swivel the flash so it is not directly flashing in the eyes of your subjects or washing out the area. Another great thing about shoe-mounted flashes is that you can put them on a timer. This allows you to use them with a stand and a bounce or umbrella in order to diffuse the light before it hits the subject and it does not limit where you can put or carry your camera to. Your camera placement will be totally separate from the light source itself.

These are great for when you are away from a power source or need something light to carry with you. Because the shoe-mounted flash is meant to be placed on your camera directly, it is quite lightweight and can be put on the most flimsy of stands. This gives you a great way to control light in outdoor settings or when you are traveling.

### ***Studio Strobe***

A studio strobe is a step above a shoe-mounted flash. This type of light is meant to tie in with your camera and will flash when you take a photo. The wireless adaptor tells the strobe when to go off so you get flawless images without disturbing your subjects. Out in the “real world” you will often see these used for wedding photography, especially at receptions. The room tends to be dark and you don’t want to ruin the ambiance. The light is so quick and undetectable it gets you the shot you are looking for without disturbing the dancers or diners. It is perfect.

Another great thing about the studio strobe is that it can be set to beep when it is fully charged again. This means you never have to worry about trying to snap a photo and not getting the image because the flash is not ready to light. This ensures you get your photo every time.

The studio strobe also has an “on” switch, to provide continuous lighting, just like a portable lamp. This means you can test the light placement while it is on, check your light meter and even place your subjects. Then you switch it back to the responsive mode and it will only flash

when you are taking a shot. This gives you a more accurate sense of the light. The strobe comes with many settings so you can control the heat of the light and adjust it accordingly.

### ***Light Stand***

A light stand is a must. This is what you will use to clip your lights to and there are a number of different types. While it may be tempting to go with the low weight light stands, consider getting a few heavier ones for the studio because if you get larger lights you need something that can handle the weight without tipping over. For the road, there are many lightweight stands that fold out from a very small packing size, making them easy to use on the road. You should still bring a sand bag with you to lock the bottom down. The last thing you want is your light stand to fall over on one of your subjects, a very real danger when you are extending lights overhead.

In the studio you should keep an array of light stands at various sizes. The stands become more unstable the higher you raise the bars, so boxes are often preferred as well. There are standard photography boxes known as “apple boxes” that are simple wooden rectangles. You can use these to get extra height out of the stand without extending the bar too high and making it wobbly. Sandbags are imperative for weighting down the light stands and the boxes so that you are working in a safe environment. Without such weights, a simple bump can cause a big problem down as the entire structure can come tumbling down.

### ***Umbrella, Softboxes***

Umbrellas are some of the most common diffusers used with lights today. They can be used with simple shoe-mounted flashes, studio strobe lights or just regular lights. They diffuse the light in such a way to provide a glamorous look to the shot. When you are looking at all the stylized shots in magazines and on the covers, chances are they are using some sort of umbrella to spread the light out. It works to more equally send the light on the subject so as not to blast the color out of the area and “burn” it so it looks too bright in some spots and too dark in others. They really do look like an umbrella. They store just as easily and can even come with various shades of color to change the color of your lighting. Most common are the slightly gold, white or black umbrellas.



Softboxes come in a variety of shapes and sizes. You can use them to create shadows or just point lights in particular direction. Do you remember those shots when everyone was a kid where you have the great profile looking up at a light and then in the corner they print a small circle of the full body image? These often used boxes to present a real spotlight effect. It gives a very dramatic look if you want it to. You can also use it to simply control where the light is going so that only certain areas of the background are visible. This will help you learn how to control your light and work with it.

### ***Flash Triggering Device***

Some of your studio strobes and flashes will come with a setting to be able to read your camera. If you want to work with other lights or you want complete control you can get a flash triggering device. This gives you the opportunity to set lights anywhere and remotely trigger



them with the push of your camera button. This gives you the right lighting for every push. You can even set different lights to different frequencies if you are working with multiple looks simultaneously, but this is often a much more advanced type of process.



### ***Flash Meter/Light Meter***

Light meters are very important. It is important that you know how much light will be hitting at different depths of your image as it will distort and effect the overall look to the glass of your lens. You may find certain places on a subject's face or body are "hot" meaning quite bright. This could be an effect you are looking for or something that will make the photo turn out badly. You can do research on various types of light and the temperatures that are best for certain types of shooting. While you can always decide what type of lighting you enjoy, there are some standards for portrait taking. This might be something you wish to discover in a basic photography class as you can only learn by doing.

### ***Extra Battery Packs***

Battery packs are essential. Not only does your camera require batteries, but your lighting unites as well. While studio strobe might have a plug in, it is good to have a battery back-up. Any time you are going out to take photos, bring extra battery packs and your charger. This will help keep you in a rotation that means you will never be without power. Extra batteries have saved many photographers. You don't want to miss the "big moment" because you are at the corner store buying more batteries.





### ***Backpack or Bag***

When you are picking your camera bag there are many things to consider. Chances are you will need more than one bag for different scenarios. You will want a bag that covers most of your lenses and flashes, but you will also want a smaller bag for when you need to travel light. There are bags that have handles and wheels, which can be quite helpful if you have developed a package including lots of heavy equipment.

A backpack bag is often great for when you are on the go. This gives you a place to put your equipment even when you are shooting. One of the dangers of shooting out in public is you will start sorting through things and leave something on the ground as you follow the shot. By having it on your back, you are less likely to leave things behind.

Make sure you have a separate bag for your memory cards. There are all sorts of cases out there now. You may even want to get two different cases, one for used cards and one for “clean” cards. When you are in the middle of shooting you will be amazed how quickly you go through your memory sticks and even more surprised at how quickly they can become mixed up. The last thing you want to do is shoot over the important images you just took.

Consider getting bounce cards that disassemble. There are many types of bounce cards for light that have small frames and different center clothes. These fit better in your bag than large cards you may use in your studio. You can easily fold them on the side and take them with you. As it is best to shoot out of direct sunlight, it becomes a way you can use the natural light without having to be right out in the middle of it.

### ***Spring Clamps***

There are all sorts of clamps you can use to attach flashes to stands, cameras to stands and various bounce cards to the right area. The most versatile type of clamp is the spring clamp. You can often adjust the size significantly and you can hook it onto just about anything. There are all sorts of clams that use a locking motion, but the spring clamp will not leave a mark on any surface. This means you can use it with a table or other sensitive area without worrying about hurting the wood or breaking glass. When you are dealing with small spaces, spring clamps often work really well.

You can get a variety of sizes and shapes. This can be helpful when you are trying to control a bit of light out in nature. When you are taking photos on a swing or at another play place you can set up a little bounce just to give you the right amount of light to add a layer to your photo making it more professional.



### ***Gaff Tape***

Gaff tape is a black tape that does not damage surfaces. It is easy to remove (much like painting tape) and won't leave behind a sticky residue. In addition, gaff tape can handle various temperatures so you can use it to add filters to lights or different types of diffusers. The tape can handle the heat of the surrounding metal, holding the objects still without causing a fire hazard. In addition, even after heated up, the tape still removes easily. As various gels and filters are quite expensive, it is nice to be able to reuse them, gaff tape makes this possible.

### ***Backdrops for Variety***

You will want to purchase a variety of backdrops for your home studio. More important than the backdrops with images on them are various solid colors. These can be used and changed with different lighting effects. These backdrops help you create a mood in the portrait and tend to give it a more professional feel. You can use the backdrop as a centerpiece or have it so far out of frame that it comes across as empty space giving you more focus on the subject.

A black cloth is also important. You can get a variety of colors here as well. These can be used to drape over some of the props you use when setting up the baby. When they match the background it gives you a better focus on the child and it then doesn't look as though the baby is sitting in a chair or on another type of prop. You can develop cloths and drops as you get further into your professional photography mode, you don't have to buy everything at once.



# WHAT LENS FOR WHICH PORTRAIT?

Lenses are important for a few reasons. Quality “glass,” as the professionals call it, provides less distortion and a truer read on the lighting in the area. You want to ensure that you have the best quality lenses in order to accomplish a professional looking shot in your portraits. While the naked eye might not detect the difference, as you start to process and play with your images you will notice a difference. All photographers gravitate in different directions when it comes to brand, but that is something you will have to decide as you get more time under you belt working with the camera and the glass. In addition, different lenses have different focal lengths. When you buy a camera lens (assuming its not a zoom lens), it will have a number on it that says something like 200mm. That number, simply put, is the distance from the film/sensor in the camera to the piece of glass in the lens when the camera is focused at infinity. It’s called your lens’ focal length.

## ***22mm***

This is a lens often used for interesting fashion shots or unique perspectives. The distortion in this lens is pronounced. It tends to make a typical face look as though the nose is twice as big as the ears because of the short focal length. You can think of all those close nose dog shots as an example of what this lens can do at its most extreme. That being said, you can get some interesting fashion shots off stark backgrounds like brick walls or urban settings. The distortion tends to play with the overall look. Probably not something you really want to do with kids, unless you are planning to have fun with the puppy too.

## ***50mm***

A 50mm lens is quite popular and standard for a very simple reason; the focal length is equal to human vision without peripheral vision. This is how your eyes are used to seeing faces and bodies so there is not much to interpret, therefore the image seems quite normal. For regular portraits, especially those of just the head and neck, it is a preferred lens that gets you the desired results easily. It is best to use this with a standard light kit to help get the right highlights on the eyes and face, but the lighting does not have to be super direct. This is helpful when you are dealing with younger, baby like subjects.

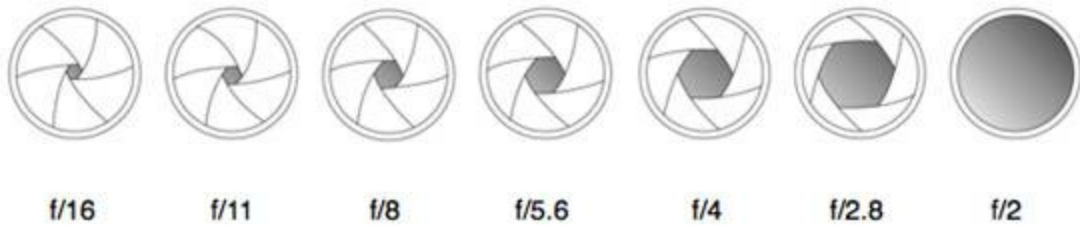
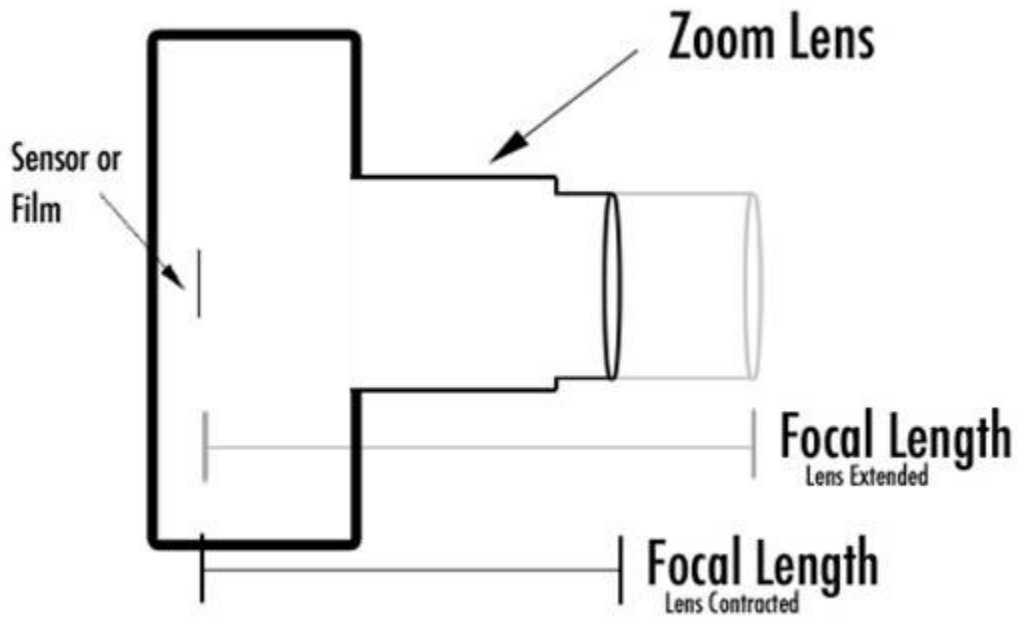
## ***85mm***

This tends to give you excellent perspective and is considered the best lens for portraits, especially “fast lens”, with a minimum aperture of F1.4 or 2.0 etc. These tend to be truly great lenses for group shots against an important building, sign or landmark. It makes a wonderful family lens for high quality portraits.

## ***135mm***

This lens is the action lens. You will get great photos of action. This type of lens works really well when you plan to take shots of the kids playing and doing activities. These are generally good outdoor lenses because they work well with natural light.

All the above are prime lenses (with a fixed focal length in mm). A group of prime lenses will let you hit all these marks. Buying as a set might be less expensive than picking up these lenses on your own. You can always use a zoom to make up a between lens you are lacking, but remember, zooms are never anywhere near as sharp.



Visual example of how aperture applies to photography, showing Aperture values as F Stops and the way your camera lens opens up for each setting to let more or less light in.

# LIGHTING TECHNIQUES

There are many lighting techniques utilized in getting portraits. The biggest issue with lighting is getting rid of any shadows. Shadows take away from the image and tend to make people look “odd” or “scary.” Whether these are actual thoughts or not, because of what we have seen in images around the world, including on video, television and film shadows tend to bring out a certain sense of the macabre that you don’t want in your standard portrait. As you develop your own sense you can start working with shadows for fun, but initially you will want to keep the shadows to a minimum in order to get the shots most people like. If you start doing more “fashion” oriented shots or “artistic” renditions you can begin to play in the world of shadows for a new and interesting look.

## *Single Light Techniques*

Single light techniques give you great shots and are simple. It is an excellent place to start if you are just beginning in portrait photography and you will get amazing results. When you are only working with one light it is easy to see how things adjust and gives you a clear-cut answer as to how to get what you are looking for. While multiple light set-ups are something you can graduate to, often they just require more time and are not great if you are trying to work with small children who have limited patience. Taking the time to perfect a few single light techniques might be all you need for your standard studio work.

## *Rembrandt*

The Rembrandt look is something that is reminiscent of the paintings of Rembrandt. The way he painted light has long been revered and his human subjects often looked amazing because of the light he painted into the image. In order to achieve this look you should set up a studio strobe with a diffusing umbrella. Raise the light to be shining down on the subject at a 45 degree angle. Then move the stand to be at a 45 degree angle from center. Basically this means it will split the difference between the front, where your camera is, and the right or left side of your subject. It will be back far enough to keep the stand out of your frame.

You should take a test shot. You will notice, this one light technique will create a shadow on the opposite side of the face. This could be a look you are interested in or you may wish to wash it out. You can get rid of this shadow by simply placing a bounce card low and on the opposite side of the light. This will bounce the light back up to the shadowed side of the face. This creates a full-lighted look without a blinding brightness, a soft exposure if you will.

Your contrast can be that of your choosing. You can bounce the light with a full white bounce that tends to make the light exactly the same. You can also build this fill light with a golden bounce, which gives an almost magical, or sunlight like glow to the image you are capturing. Whatever color you go with, you can also adjust the umbrella as well or put a gel over the light in order to create various color effects. All of this is still done with a single light. Your spring clips will come in handy as well as your gaff tape.





Shadow from Rembrandt lighting technique, indicating a light to the right of the child.

The square sparkle in the eye, is known as a "catchlight" and can help you determine how any portrait was lit. This is a well kept secret of the pros

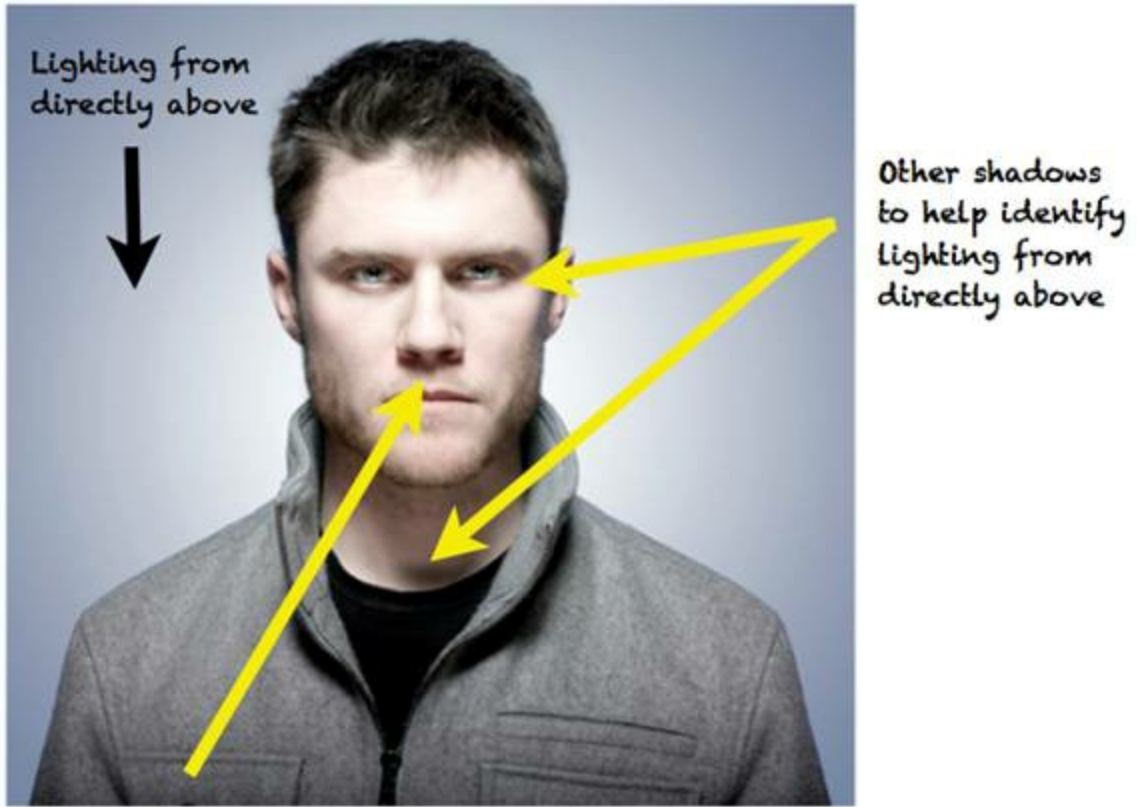
## ***Butterfly***

The butterfly lighting technique gives you the glamorous look you are used to seeing for fashion show photography or on the covers of magazines. This tends to put the camera at a higher point so you are shooting down on the subject. You will use an umbrella and a studio strobe and place it directly in front of the child you are taking a photo of. You raise it high above and the stand should be just to the left or the right of the lens.

From here you should raise the tripod. You may need an apple box or step stool to stand on so you can focus your camera in on the subject. You will catch the light in their eyes and it will give an overall twinkle to the image. The contrast on the cheek bones becomes more pronounced. For smaller children with more cherubic faces, you will want to use a low placed bounce to fill in the shadows. This will give a more "fantastical" effect to the photo rather than



a “glam” shot. Older children tend to like this, teenagers, as it makes the face look thinner and forces the eyes to really “pop.”



The classic hollywood “butterfly”  
caught under the nose

# TIPS TO GET BABIES AND TODDLER PORTRAITS

When you first start out, it might seem impossible to get toddlers to do what you want them to for the picture. Even worse, babies. Trying to get them in a state of “grace” when they are not being held can be complicated. One of the best things you can do is throw out your preconceived notions. You need to realize that getting portraits of kids often means capturing their personality, which means giving them free reign. If you are ready to catch the action you might get the portrait you never expected to get. For babies, try working with sleeping babies as well as awake ones, both portraits are lovely.

## *Distractions, Know the Noise or the Light*

Take some time to experiment with your child. Try different noises and light cues to see what their reaction is. This is a great way to discover how to illicit the face you wish to capture. Then make the noise or light cue near the camera so the face is made in a direction where you can capture it. This helps to get you exactly what you are looking for.

## *Keep Interesting Items Near the Camera*

Make sure that all interesting items that might attract the attention of the baby or toddler are in the direction of the camera. If there is something the child is focusing on that is not near the lens, consider moving it or moving the camera to take advantage of the focus of the child. It is often best to work with their own natural curiosity rather than trying to force an interest in something you thought they would like. Just like kids playing with boxes before the toys, fighting it is futile and embracing it will get you the photos you are looking for.

## *Props for Babies to Get Good Poses*

Babies are little lumps that can be difficult to mold. While there are the cute car seats, Bumbo chairs and even bouncing chairs, these do not make the best photo ops for the baby. The positioning doesn't look natural or cute. This is where you can really get creative by using fun props to split the difference. It props the baby up, gets them more engaged but also serves as something fun in the photo you are taking.

Many people like to use large blocks or stuffed animals. These often give you an adorable shot and you hardly notice this is what is holding the baby up. If you want to take it a step further, inspired by Anne Geddes, many people are using slings and outfits in interesting ways to get the right picture of baby. You can build the sling up in something that looks like a flower or between two fake trees to get the desired effect.



Babies are also truly adorable when you bundle them up in a cocoon. The current methodology of swaddling has become quite popular and you can often get great shots this way. The baby will be comfortable and content, even falling asleep quite often. You can then place the baby how you like, change out head dressing and get peaceful shots without having to worry about flying hands or feet. With minimal prodding or poking you can get the baby to open their eyes. It won't be as startling so it usually does not elicit crying but rather just a content, open-eyed look perfect for your shot.

### ***Allow Toddlers to Play***

Some of the best shots you will ever get of a toddler are the ones you never expected. If you allow them to play in a controlled, well-lit environment you can get excellent portraits as they try to show you toys and interact with the things around them. You should stock the area with things they like and even try to “surprise” them every once in awhile for a truly amazing look that tends to play really well on camera. As they go through all their items, you will find it is easy to know when to take your shots and with the right fill lights everything will look perfect.

### ***Negotiation for Children Old Enough***

You can take the playing one step farther with slightly older children because you can negotiate with them. This means allowing them to play, even pose and play dress-up for certain shots with the agreement they will do a few poses you want. This gives you the perfect dynamic to get both the more candid looking images while still getting the standard posed shots most people like to keep in a photo album. Of course, you never know what you might like best. Often the shots that are less than posed come out much better than those you thought you just had to have.

### ***Rocking for babies***

If you do have a baby who is fussy, consider allowing the child to be rocked for awhile. This often calms them down and you can put them back on the mat or the props and get a few quick shots in. Adding one of those vibrating baby chairs helps quite a bit as well. When the child goes from rocking to lying on their own, the difference isn't as great when the chair is vibrating. It tends to keep them happy an alert, though some will fall asleep.

# HOW TO PHOTOGRAPH PRIMARY AGE TO TEENAGERS

As children get older there are things that become easier and things that become more difficult. With primary age children you need to remember you can now negotiate. This can be quite key to getting them to do what you want them to do as well as find shots that work for them. At this age, they are beginning to find their identity. When it comes to junior high, try to find things that show them why a certain shot is good. They need proof the shots you are taking are “normal” as no junior high kid wants to stand out as different. Teenagers usually have no trouble voicing their opinions but getting the photo without the “sour” teen face may be complicated. You might want to find a way to incorporate it in order to make the photo make sense.



## *Primary School*

For primary age children make a plan, one that allows them to choose some of the photos while you choose some of the others. This means allowing them a little freedom to come up with backgrounds and places where they want to be shot. This often makes them feel at ease and helps them focus once you are doing some of the more focused shots.

No matter what type of place you choose, ensure that you have props. Kids of this age love to play with different things and you will get some adorable images if you allow them to be free. This is also a great way to document some of their favorite toys so you don't have to keep them forever. There are many toys that hold a special place in a child's heart as they age and a photo showcasing this relationship could be quite valuable in the future.

## *Junior High*

Here is where you get into the sticky trappings of pre-teen angst. This can be the hardest age to photograph for some and the easiest age for others. There is a twelve month period almost every teen/pre-teen goes through where every photo seems to elicit some sort of scowling look. Believe it or not, this does not mean this young human is having a bad time, but rather they are reticent to show an adult human being that anything they do might be fun or interesting. Typically the most trying time for parents, it can be an area of really fun photos if you attack it right.

At the beginning of high school you shouldn't have too much trouble. You need to play to the kid's strong suits and if they like dressing up, photograph them doing that. If they enjoy making faces, be willing to take these types of images. What you have to be most careful of at this age is listening. This is often when kids are the most self conscious, so you don't want to do anything that makes them uncomfortable.

In order to get posed shots, try to make it fun. Don't be too parental but try and get ones with their friends, not just with family. If you do family posed shots, do not put them out for everyone to see without approval. You will lose the trust of your child and all the fun in taking photos if they are afraid the photos they dislike are going to be on display for everyone to see. The more aware you are of their awkward feelings, the better your images will turn out.

Try to have a conversation with them. Whether you are attempting to get a family photo for an album or a single shot for the Holiday card, let them give some input as to what type of picture they would like to see. This will often give you the best shot of getting something fun. Even if you think it is totally insane, try it. It might not be the image you ultimately use, but the kid will feel respected and will be more likely to participate willingly for other shots as well.

### ***High School***

You kind of get back into the fun years when they hit their teens. Now they will be all about experimenting and showing their personality. Whether it is a perspective shot where it looks like they are holding up the White House or a shot with a group of their friends, they are more than likely coming into their own a bit. This is a time when you can take advantage of certain events to get great images of your child and their friends. You should try to do this in the most natural way possible. Use wide-angle lenses for big groups and don't try to get them to pose for too long. Make deals with them about getting one "formal" shot and then let them get a little bit crazy.

This is also a good time to sneak up on them. Try to get some candid shots when they are just hanging out or doing homework. You should know this is likely going to get a negative response so make your one or two shots count. If there is a particular area where they hang out a lot, you may wish to wire one of your studio strobes there so you can get a quick and simple shot with perfect lighting every time.

When it comes to party shots, this is when things get more complicated. Teens don't usually want too much supervision, so you may not get very many "moments." Settle for a cake shot or two and call it good. You may be able to have a little more fun with posed shots one on one. If you have developed your skills and your lighting prowess enough, you can go through magazines with your teen and pick out images they want to recreate. This tends to be more fun

for girls, but you can try with a son as well.





# TIPS TO MAKE IT FUN AND ENGAGING FOR ALL AGES

Getting your photograph taken can be fun or it can be uncomfortable. There are a number of things to consider when you are working with your children. First, is the age range, as certain ages can focus more than others as well as co-operate more than others. Next, you need to find a way to make it fun for everyone. You need it to be fun for you so that you have the patience to take the photos you want to take. You also need to find a way to engage the child so they will keep giving you good looks to take photos of. If you find yourself getting bored or the kid getting bored you will get boring images.

There are a few things you can do to extend the life of the photo shoot. Ways that you can get the person engaged and interesting in having their photo taken so that you get exactly the shot are looking for and they don't ever reach the, "are we done yet" place that comes through all too clearly in photographs.



## *Work with Personality*

First you want to work with the personality of the child. This means knowing what they like to do and what they like to be around. This will help to draw them out of their shell so you can get some great shots. If they have particular games they are interested in, find a way to incorporate those into the photo shoot. Ask for their ideas as well. This helps invest them in the process.

You should also work with personalities when you are taking family photos on vacation. You don't need to get everyone's photo by the giant bear statue. Pick out things that fit with each child so you have a variety of images from each location. This will make for a more interesting book later on and it keeps the process from getting boring with every stop you make. No one

wants to sit and wait as everyone cycles through the same picture.

### ***Play Music to Keep Things Light***

Don't stress about the perfect picture. Choose some music and keep the mood up beat. Whether the kid starts dancing around or just finds funny moments you are sure to get more relaxed and "real" images if they don't feel pressure. Don't push the smile either. You will want to get a few posed shots with the smile, but other than that, try to let the person be. It is hard to stay invested if you feel like you are always trying to force a smile or a certain look. Put more emphasis on the eyes. You can get a lot by just staying in the moment.

Have a conversation, watch a show or read a book. This is another way to catch real reactionary moments. With the remote trigger, you can shoot the image even when you are sitting near the child. After some time they will likely forget the camera is there and you will get some great images that aren't posed or faked. Let them play with their siblings as well. You might get some "fighting" photos, but then tend to be better behaved in front of a camera. They don't want documented proof of how mean they can be to one another.

### ***Let Them Bring Friends***

Depending on their age, let them bring their friends. This can mean actual live people or pets or toys. The more comfortable the atmosphere the better the images you will get. Maybe even take them outside for the right overall look. If they are ice cream fiends, take them to get a few scoops and take some photos there. These will be unique shots you can keep forever.



# TIPS AND TRICKS WHEN SHOOTING KIDS PARTICIPATING IN SPORTS

As kids stay active these days by participating in a wide variety of sporting endeavors, it has become even more relevant to the history of the family. Often weekend activities revolve around the sporting events of the children and you want to make sure you can get excellent images documenting their participation in the events. Sports mean lots of fast moving children and trying to get something beyond the portrait of the kid standing with the ball. At first, this type of photography can be quite frustrating, but in the end you will find that the images are easier to capture than you might think. By changing up your angles a bit you can get a more accurate representation of all the activity that happens during the event.

## *Get a Viewpoint Looking Down*

You have often seen people way in the back of the bleachers taking photos, this is because if you use a wide angle lens and get up high you can get a better image of the whole field. If you use your zoom from this angle you can get close-ups showcasing the kids and their “props.” When you are down at field level you can also get great shots but this is more focused on the overall activity rather than the face of the child. This adds a level of energy to the photos that other shots just can’t accomplish.

## *Mix up the Angles*

Mixing up the angles is very important. This is how you get shots of the children where you are seeing the determination on their face or other shots where their legs are simply a blur as they approach the ball. Whatever angle you go with it tells a different part of the story. This adds the feel of motion to your ending images that taking photos from one, static location just can’t do.

## *Sit by the Goal*

Depending on the sport, if you can get down by the goal it is a great place to get shots. You can get the approach shots as well as some amazing action shots of the ball or the puck. If you ever study a newspaper, goal shots are quite often what make the front of the sports page. You are never going to get as much activity anywhere else on the field, court or ice than you do right by the goal. This energy translates to your images as it is all about the focus of the team. You can even get down low and take a few shots upwards to get a new perspective on the shot.

## *Take Some Shots of the Sidelines*



Atmosphere! It is so easy when you are shooting sports to only get the kids that are currently active but you want to show the energy, enthusiasm and fear on the sidelines as well. Those who are about to go in or cheering the team on are just as important to the overall energy of the event as the kids who are currently playing. Some of the best football shots are of the guys watching from the bench, fiercely replaying the play in their mind as they watch their teammates carry it out.

### ***Take Surrounding Shots as Well***

Set the scene. Parents in the stands, kids playing on the playground, shots of the equipment; all of these photos help to set the overall tone of the event. Just as you would with a wedding or a birthday party you want to document the surroundings as much as the event itself. It is quite important to know what went into making it all happen and it makes for a more diverse display at the end of your shooting. Being able to tell the story is what makes a truly great photographer.

### ***Use the Continuous Mode***

Continuous mode is when you hold down the button and the shutter just keeps taking pictures. This allows you to get multiple so you can pick the best ones. This also gives you a quick still capture of the action. If you are getting someone about to hit the ball at a softball game you can then put it in the book as a series. You will show them from start to finish and it is a nice effect. This type of shooting also helps you get more desirable faces on the children than if you just try and get the right shot on your own.





### ***Over Expose the Light, You can Bring it Down in Post***

This is the most important for inside shooting. In order to cut down on the blur, over-saturating the light settings can help you get the shot you really want. You don't want to have a bunch of dark shots of kids you can't recognize. Now the stadium lighting isn't always the most flattering but you can use Photoshop to change the temperature of the lighting after you have taken the shots. While you don't want to have to fix everything in post, light is one thing you can adjust as long as you have enough of it. Better too much than too little.

### ***Don't be Afraid of the Blur***

Blur shows action. It can be tempting to try and get everything in focus but if the ball is blurry or the legs are blurry it simply shows the action of the course. This action is what makes the photo come alive. You don't want the faces to be too blurry, but having the focal point be the face and letting the rest happen as it does will give you truly dynamic shots. These types of "blurry" images are what make a great action photographer.



# THINGS TO CONSIDER WHEN SHOOTING STAGE SHOWS, DANCES AND MUSICALS

It is always a point of pride to take photos from the events of your child's life including stage shows, dance programs and musicals. The problem tends to come from the lack of control. While the professional photographers seem to catch these moments in exquisite detail, at best most parents get a somewhat grainy shot, usually with their child's face contorted in some strange way. Out of a hundred shots only one or two come out good. First, don't despair on the number. If you have ever seen the contact sheet or DVD from a professional photographer, there are a million pictures taken for just a dozen keepers. The key is to be fast enough that you get the shot you want and not just all the "funny" looking ones.

Next, remember to use what the professionals have set up. Part of the reason the professionals get such good shots is they have the placement set up so they are getting the best angle on the lighting used in the show. This tends to be the key to making sure you at least get a few shots that look similar to those taken by the person who will charge you an arm and a leg for the package of photos.

## *You Can't Control the Lights, but You Can Bring Filters*

While you can't control the lights you can bring filters. It is often advisable to go to the dress rehearsal or check out what the lighting will be like during the show and test different filters. This gives you a sense of how to better control the light. Diffusing filters will give you a softer glow around the children. Certain colors can work with the colors of the light to help make the shading a bit more normal. You don't notice it when you watch the show, but the lighting cues set the mood and tend to give the children funny colored skin or strange, scary eyes. By counteracting the reds and yellows with blues and purples, you can often get a very romantic looking shot.

## *See if You Can Get Near the Professional*

You are not the only parent on the block and professionals don't like to be crowded. Setting your camera up near the professional gives you the best angle as they have scouted out the situation. If you are willing to work behind them or on a different level if there is a balcony, you can often get similar results without causing too much trouble. Definitely keep your information to yourself. If 100 parents want to park right next to the photographer it is not going to work. You may even find that some schools will not let you do this or may not even want you to bring a camera. Try to be as discrete as possible so you don't upset the status quo.

## *Use a Tripod*

It can be tempting to put your camera in your hands as it feels more personal, but the tripod offers a few advantages. One, you can zoom in further without getting the camera shake that often ruins images. Two, you can use a remote to take the images so you can view the show in real time, not just behind the lens. And finally, the stationary set up gives you the best focal



point and you will simply take your pictures from one location with your best chance at focus. Use the hand held shots for backstage, before and after the show and that will be how you mix it up. You don't need a ton of images from the show itself. You don't realize how much you miss by being behind the camera the whole time and how annoying you can be to the rest of the parents. The tripod helps you get what you need without putting anyone else out, including the professional photographer.

### ***Use a Fast Setting***

Because you aren't going to be able to use a flash, you need to ensure you get enough light to expose the image, but yet you want to be able to quickly cycle through images. You cannot afford to have a long time between shots because you will miss the action you are looking for. This means using a wider aperture while keeping the shutter speed quick. You will get a bit of grain from this but you won't miss your moments. You have to think of it like shooting a sporting event. If your camera has the continuous shot setting, it is usually the best. This means you hold down the button and you get 20 or 30 shots. This gives you the opportunity to get that exact "look" or "moment" you are shooting for. Those moments are gone at the blink of an eye, so if you try to do it yourself you will likely find you are missing what you are going for. By the time you press the button it is just simply too late.

# HOW TO TAKE GREAT PHOTOS AT FAMILY OCCASIONS

Everyone has had that moment where they know this event was great and fun but the photos just don't show it. You have a bunch of standard shots of people posing and then you have candid shots where no one ever looks quite right. The food looks bad, the lighting is bad and overall, the fun of the event seems to be entirely deleted in the remaining images. As these are the photos you have to show for all time, it can be quite sad to not really capture the heart of the event. Especially when your children are young, you want them to be able to get a sense for what was going on around them. You never know when they might get curious about their past or their childhood and the images need to live up to the hype.

There are a few things you can do to get better photos at family occasions. Some of these things have to do with the photos you take and some of them have to do with how you present the images afterwards. You never want to forget how important it can be to find the right type of layout to help you with your proper story telling, this is as much of a photographer's job as is the actually shooting of the images. Don't forget to set up a remote flash or studio strobe in some of the interior locations. This will help you get better shots consistently and you won't end up with the red eye problems. You can set it out of the way, but just in an area where you expect to be taking many of your photos.

## *Think of it as a Story*

First and foremost you need to think of the event as a story. This means plan for a through line to the entire scope of your imagery. Now, you may get derailed and unexpected things will happen, but knowing what you are going for makes all the difference when it comes to really getting a feel for the event, the emotion and the activity. You should take your time the week before to plan some shots you definitely want. These should include images you will take before anyone ever gets there. Preparation photos as people set up for the events. Photos of the invitations that went out, even if it is a photo of the Evite on a computer screen will help to tell the story. All of these details help to set it up.

If it is a surprise, make sure you know where you are going to stand and how far in advance you want to be there. You will want to get individual images of people as they arrive as well. This will be something the person who was surprised will appreciate later as they didn't get to be there for that part.

Take time elapse photos throughout the event as well. Get some with plates full or the grill going full speed and then later as the plates are empty or stacking up. It gives a sense of how much activity there was at the party or social gathering. This includes getting photos from the cleanup and even just the after effects. Think of the photo with all the wrapping paper piled up under the Christmas tree where there were once beautifully wrapped presents.



### ***Don't Get too Many Poses***

Part of your list should include the family shots you feel you must get. Mothers and daughters or certain family combinations but don't over do it. While many people like photos of just their kids or the nuclear family, that is not going to tell the story. They will also get those photos on their own. Think of more unique combinations as well as one of the entire group. This is where you will utilize your wide-angle lens and maybe even a ladder to take the shot from on high.

### ***Use a Wide Angle for Group Shots***

As mentioned before, you will want to use a wide-angle lens for group shots. This gives you the chance to get more people in the picture without having to lose the details of the faces. You can still be quite close and get everyone in. Don't think of this lens for just the big posed picture though. If you are serving a buffet like meal, take some shots of the food and people gathering the food with this type of lens. It gives a certain distortion to the image that makes it pop. You can even play with your level of color saturation to showcase the food and the excitement of the people.

If you are at a party where there is dancing, shots like this are great for the dance floor. With a wide-angle lens you can get much more detail on the images and you can enjoy the overall feel of what is going on. This is a great way to showcase the action as you will even get a little edge blurring which helps you feel the motion all around and adds to the emotional value of the final

picture. With kids, this is a great tool. You will get the combined look of joy on their face while really capturing their crazy level of activity and energy.

### ***Consider Taking Photos from on High***

Use the various levels of the party to your advantage. Taking photos of people from above allows you to get more people in your image and tends to give a unique perspective to the shot. You can also level out the image itself. This means using stairs or decks or balconies to give an added sense of height. You often don't realize this, but the energy of those talking from the ground to those up high tends to give your photos a sense of purpose. You feel as though you are really catching the moment.

With kids, this change in level also helps them showcase their mobility. Images of kids with taller adults, climbing on things or even sitting on chairs that are clearly too big for them tend to have an endearing effect. These images will pop from the collection. They are also fun for your kids when they get older. They will see themselves as they barely take up a quarter of a cushion on the couch and think about now when they barely fit lying on the couch altogether.



### ***Snap a Few “Unknown” Shots***

You know someone, a child or adult, will fall asleep at the event. It is a given, especially if there is food. Make sure you get a few shots of these moments. It is not disrespectful but rather shows how worn out the people were from the activity. When you lay this out right next to an image of the same person dancing and eating it will help to sell the story you are telling.

### ***Consider a Slideshow***

Laying out images in a book or slideshow is quite time consuming. You will likely have many more images than you ever need. Remember, not every image is a keeper; so don't get precious about all the photos that you take. Remember you can always delete the bad ones. When you

start laying out your book, consider doing a slide show instead. This is a great way to use music to help tell the story of the event. You have a chance to really capture the energy and feel of what you shot by using the computer programs that help transition from one shot to another. You can group the images together in a way that makes sense and from there choose the most fitting music to bring the whole story to life. Many people never pull out books again, but kids love watching videos, especially of themselves. You can take your professional looking photographs and lay them out in a way that entertains.

# CAPTURE GREAT PHOTOS OF YOUR KIDS BIRTHDAY PARTIES

Just as with other events, you want to think of the entire event as a story. You will want to make a list of all the “must have” shots so you can put a little index card in your pocket. Often you will forget the most simple thing if it isn’t written down because there is so much to do. You may wish to assign someone to take a few shots of you and the kids as well so that you are a part of the event. Often this is best served when it comes to bringing out the cake. A mom or a dad’s job, typically, it is nice if you can have someone else take this shot so you will be in there for the big moment.

Don’t be afraid to look at your cheat sheet throughout the party. You may think of things you wish to add, remove or just give yourself the reminder you need to get a shot before the moment passes. Photographing a party is kind of a full time job. You may not get much time to enjoy the event, so be sure you have helpers to handle the other details like restocking supplies or food as necessary. You don’t want your guests to go under served as you are starting your own professional photography practice.

## *Think of the Atmosphere*

Take photos as you are setting up. These will be some of the most calm and framed photos of the event. It gives you a sense of the “calm before the storm” and lays out all the details you spent so much time planning. This includes photographing the invitations, decorations cake and anything else you can think of. This might even begin the night before. It is fun if you can have shots of the decorations half up and half down as it gives the viewer a sense of the activity with setting things up.

If you are having a special craft area or project place, make sure to take a photo of it before it is disturbed. This will be something you want to place right next to the chaos of a photo later on. This will showcase the activity of the party as well as how much fun the children are having.

## *Meet the Kids as They Come In, Get Relationship Shots*

You will likely know many of the children already, but it is fun to meet them as they come in. This gives you a chance to ensure you get at least one shot of every child who arrives at the party. You may wish to plan these shots with the birthday boy or girl, but if the arrivals are too scattered, don’t expect the child to stay for the whole time. You can also take great photos of the parents with their children as they arrive. This is a nice photo you can send later with the Thank You cards, it adds a bit of a personal touch.

Even more than documenting the moment, you are developing a relationship with the guests as they arrive. They notice your role in the party and will be more comfortable as they see you interacting with everyone. You know people act differently around a camera, so trying to break down the wall is something that helps you get better candid shots and more “real” images of the



party.

### ***Know the Plan of the Party***

You are likely the party planner, but make sure you are familiar with the plan of the party. This means if there are certain times when things are going to happen, you need to be prepared and at the right place when those moments occur. If you have a spouse or an older child who can help you with the timeline and keeping things on schedule, this will make your picture taking easier. You don't want to feel rushed from one moment to the next. The other thing you can do with this schedule is work in some time for you to be a part of the party. Whether it is talking to the guests, participating in the crafts or doing something else, it gives you a chance to be more than the photographer, you get to participate!

### ***Utilize Series Mode***

The series mode on your camera is great for all events with children. This tends to give you a constant stream of images so you get the ones with the best facial expressions. During dancing, activities or opening presents, this is often the best setting to use. You will hold down the button and the shutter will keep firing until you release. Be sure you do this in an area where there is enough light as it is not something that will work with your flash or a studio strobe. Outside shots are particularly easy to do with this type of shot process.

These series shots are also a great little photo strip for later on, when you are putting a book together. It makes the image almost like a flipbook of activity, where you can clearly see how the reactions change from one moment to the next. You may even wish to turn some of these series shots into black and white or play with the coloring to make them something that really pops.

### ***Look at Things from the Child's Perspective***

As an adult you see things differently. Your child's birthday party is one of the best places to get down and dirty. You should try to take many shots from the angle of the child. This not only gives you an interesting perspective for the photos but it also helps to tell the story from their point of view. This is very valuable later on when the child is looking over the images. It may even trigger memories better as well as provide a fun look back on how things "used to be." Slides, balloons and even bounce houses look so very different when you are low to the ground as opposed to tall and looming above.

### ***Change Focal Lengths***

Focal lengths are another way to capture a unique look at the party. You can take some images from far away more like a true observer. Other images can be close up and intimate to get a real sense of the closeness of the action. By varying the focal lengths of your lenses and your shots you will get a more active look at the party and the final images won't seem sedentary and "blah." People don't realize what a difference this makes and why many images from point-and-shoot cameras seem flat. The similar focal length gives you no depth of field and thereby no difference from one shot to the next. This tends to bore the observer and overall provides a bad sense of the event. Birthday parties should seem active and blurry and varied, this will



make the ending photo album come alive.



### ***Get Candid Shots***

Candid shots often tell the story better than the posed ones. While there are shots you won't want to do without, make sure you take plenty of images when the kids don't know you are looking. Parents too. This gives you a true life to the party; it brings about a sense of the joy and the banter that was happening just beyond the lens. It doesn't really matter why the people are smiling or laughing, just that they are.

This also means finding some great shots of those kids that just pass out. Some of the most adorable birthday shots come when the sugar high starts to die down and some of the children literally fall asleep in the midst of the chaos. Try and get the surroundings so you can see the child is asleep with a whirl of activity all around. This gives you the sense of what it was like to be that age, when sleep just washed over you in a way you could not deny; even if you desperately wanted to.

### ***Don't Forget to Check Your White Balance During the Day***

White balance needs to be checked throughout the day. As the sun moves across the sky, your images will start to take a different look. If you keep your white balance the same, you can keep the same great lighting as before. This gives continuity to the imaging missing from most photos taken by the average person. This also allows you to change the settings on your various flashes

to ensure you are getting the best shots with the fewest shadows. Of course, some of the images should look different. If you are showing a movie or you want to capture the glow of the candles, your white balance should be set differently at those times. It will give it a starker contrast.

### ***Get After Shots Too***

Finally, even though you will probably be exhausted, take shots after everyone has left. This means leaving the paper on the floor and the empty plates everywhere. You want to showcase the ending chaos that was left in the house. This gives you a full sense of the party and the energy that coursed through the event. The discarded napkins and the overflowing trashcans will all show how much fun everyone had. You don't need a ton of these images, but a few. If you are having people helping with the cleaning, take photos of them too. Often the moms have the best time as they are putting back together the pieces of the broken rooms and getting things back to a normal sense of organization. It is a way of controlling the chaos that is children.



# INDOOR PORTRAITS AND THINGS TO CONSIDER

As with any type of photography, the biggest concern when shooting indoors is light. While you can control the light much more efficiently, you have to be aware of what you are doing in order to get the best shots. As you practice more you will be surprised by the light and the capabilities of the camera. You will learn what works best for you and how to utilize the light sources to the best of their abilities. You will find you will use fewer lights as you get better at the process. Don't be afraid of your light meter, it should be your best friend and it should be practically glued to your hand.

## *Bounce Light to the Eyes*

Shining lights directly into people's eyes is not their favorite; but bouncing light gives you a more diffused look. By working with the bounce card to get the image of the person with the light bouncing in their eyes you will get a sparkle that radiates through the image. A soft bounce will provide a less bright light but still give you the radiant effect. This is a great addition to portraits as it brings a sense of tone and joy to the image.

## *Check Your Windows*

Use natural light where you can. As much as we can recreate light, natural light is always the best. Of course you may bounce it or diffuse it, but it gives a glow and a color spectrum unlike any other light created. North facing windows are your friends. They give you a better "golden hour" light that can really make a perfect soft portrait look. Blinds and filters can help to capture this light and give you the effect you are seeking.

## *Consider the Surroundings*

You need to understand the surroundings. Surroundings can be distracting to your subjects as well as to the lens. Everything that you see in frame should be put there specifically. You should know what is in every quadrant of your shot. Try to include both foreground and background pieces in some. It helps to give a sense of motion as well as a sense of size. You want to focus on the subject, but there needs to be something that can be beyond the focal length to add depth to the portrait.

## *Diffuse the Light*

Diffusing the light is important because it gives you a more romantic look to the portrait. While you can use direct lighting for harsher looks, this is not usually what you are going for in portrait work. You want everything to have fuzzy, soft edges to bring about the "love" of the image.

## *Tripod, Even if You Think You Don't Need It*

It is fine to take some portraits as hand held shots, but really you should be working from a tripod. It gives you more control over the scene and when you have the perfect shot lined up you don't have to worry about the placement of the camera. You may only have a few seconds when it comes to getting the shot done, so the last thing you want is to miss a moment because you had put your camera down.





# OUTDOOR PORTRAITS AND THINGS TO CONSIDER

Outdoor portraits add another level of challenge to portraits. You are working with moving light and you are working with unknown factors in the background. That being said, they tend to be more fun than studio shots. Studios are limited in what type of images you can get, whereas when you have outdoor shots the sky's literally the limit. This gives your images a more interesting look than the standard shots by others.

## *Focus on the Eyes*

You may have moved outdoors but the eyes are still the windows to the soul. You want to focus on the eyes and build your shot from there. The eyes will tell the whole story of the person and bouncing just a little sunlight there will help to give you the twinkle you are looking for.



## *Shoot in the Shade, Bounce Your Light In*

Direct sunlight is a horrible idea for portraits. You want to be able to control the sun and the way you do that is with shade. This means you get to bounce the light where you need it. You have more control over the contrast on the face and how much of the background lights up. You can shoot in the shade and let the background be overexposed in light, it tends to give a nice halo look. Golden hour, right before the sun fully goes down is also a great time to shoot. You should set up early because you are going to lose the light quickly, but you will get a great glow on everything you shoot.

## *Hope for Overcast*

Overcast days are great for shooting. The clouds give you natural diffusion beyond what you could do on your own. This also allows you to shoot in more open spaces because you aren't

creating shade. Of course, if you don't get so lucky, a few stands and cards allow you to create shade over the subject and you can frame it out. This gives you the chance to utilize open space even on a full sun day.

### ***Shallow Depth of Field Deserves a Wide Open Shot for Light***

A shallow depth of field tends to make a more intimate portrait. For tight shots like this, leave the lens wide open for the light. This will flash out the background and give you a fun, interesting look to your portrait. The background will seem surreal and the focus will be on the subject.

### ***Don't Forget the Spring Clamps***

Bring lots of spring clamps and bounce cards. You never know what might be most convenient to strap something to and you want to have the right equipment. With a set of different sized spring clamps you can use tables, trees, playground equipment, anything available to help you control the light. It makes for a much easier shoot and you will need far fewer stands this way. Carrying stands around outside is difficult, and often requires an extra body, spring clamps can save you.

### ***Take Your White Balance***

Don't forget to stop and take your white balance. This ensures that you are getting the coloring you think on the images. You can play with the white balance to get more red or blue, but you should be aware of what you are doing. Your white balance likely needs to be taken every hour if not more often as the light alters. You don't want to get home and find you have a bunch of blue tinged shots just because you didn't take white balance.



### ***Avoid Signs, Unless It's On Purpose***

Signs, power poles and power lines can really destroy a shot. Do your best to frame these items out unless you are doing a more “urban” portrait. The point of being outside is to give the illusion of being the only person on the planet. When these items come into play it tends to give it a whole different feel. While some of these things can be removed in post, it is much better to avoid it from the get go.

### ***Tripod for Control***

Just as with indoor portraits you want a tripod. Some photographers keep two cameras, one on a tripod and one in their hands so they have options. You don't want to miss your moments because the camera isn't set. The one on the tripod should always have the perfect angle and be ready to go.

### ***Filters!***

Experiment with different lens filters. This can control the light on the camera itself. You should take some images before your photo shoot so you understand exactly how the filter works, but you can control the coloring with these kinds of additions. You can give a golden glow or counteract the city smog. Filters are a very inexpensive way to expand the number of looks you can get on a single photo shoot.





# THINGS TO CONSIDER FOR YOUR FAMILY EVENTS AND YOUR PHOTOGRAPHIC FUTURE

Remember that above all else, photography is supposed to be fun. Just as when you are dealing with your children or other children in any other endeavor, the more stressed out you are, the more stressed out they will be. Children take better photos when they are having fun and when they are enjoying themselves. While you cannot entirely control this with the surly teenager, you can do your best to make this a fun and interesting experience for them. You will find this will also make it more fun for you. If you are planning on becoming the main photographer for your family, don't cut yourself out. When you are the one always holding the camera, it will suddenly seem like you are not at any of the events. As much as you like taking the photos, you may want to hire a professional or hand the camera off to someone you trust every once in awhile. The last thing you want is to miss the fun of the event because you are so focused on getting all the shots.

For school events and other special occasions put the camera down every once in awhile. It is tempting to look at everything through a lens, but sometimes you miss the joy of the moment when you are constantly looking at things through a device. Just like the computers, phones and other devices of the world, you are separating yourself a little bit when you are photographing rather than being a part of the action. Being the main photographer tends to make you an observer rather than a participant. You don't need a picture of everything. While you can take a million pictures in order to get the five perfect ones, sometimes just one shot is enough. It gives you a chance to document the moment without having to give up your ability to be in the moment. Not everything is photograph worthy. You should set some goals for yourself, like photos every month in order to ensure you are capturing what you want but that you are not getting carried away. There is only so much room for photographic history.

Back-up your work! There are so many things that can go wrong with computers and the hard drives inside and out. You want to make sure all your photos are always at least in two places. Then when something suddenly goes wrong you know you have a place you can go without having a panic attack. There are a number of services offered online now as a back up service for your computer. This can be a great way to keep a second copy off site. If you ever are the victim of a fire or a flood you may not lose all your family photos in one foul swoop! Finally, enjoy what you are learning. Photographers spend their whole lives learning about imagery and how to get the best shot. You will never be done experimenting with shooting, processing and organizing your images. This is normal. It becomes the type of hobby that consumes your consciousness. You will want to find new ways to capture photos, get into new gear and always be wondering how you can get better coloring. This is a normal side effect and something that will engage your brain for years to come. You never have to grow up when you are the documentarian, don't forget that!



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A handwritten signature in red ink, appearing to read 'Steve Rutherford', written in a cursive style.

**Steve Rutherford**

# GLOSSARY

## 1,2,3

**4K.** 4K is an emerging standard for digital motion picture resolution. The standard is so named because it refers to its approx. 4,000 pixels of horizontal resolution. 4K incorporates a number of aspect ratios that all utilize 4,000 pixels of horizontal resolution x differing numbers of pixels of vertical resolution. This is contrary to the standard HD resolutions of 720p and 1080p which represent the number of vertical pixels.

**51 Point Auto-Focus System.** Available in selected Nikon D-SLRs, the 51-point AF system positions 51 points of focus within the frame to allow photographers to choose a variety of focus configurations to suit the shooting situation.

The 51-area grid forms a wide rectangle across the frame, with minimal spacing between each AF area. The system keeps even quick-moving subjects in focus across a wide extent of the frame. The 15 points of the three center rows of focus points employ cross-type sensors for powerful focus detection.

## A

**AA-** Power source/battery type. Also NiCad and NiMH

**AA Filter** - Most Digital SLR's have a "Low Pass Filter" (LPF) or AA (Anti-Aliasing) Filter in front of the CCD or CMOS sensor. This helps to eliminate colour aliasing problems, or the "moire" effect.

**AC Power** - Alternating Current which is used to operate your digital camera directly from the mains supply rather than a battery. Sometimes supplied, but normally requires additional expense.

**Accessory Shoes** - also often called "**Hot Shoe**". The early flash types were simple metal brackets. To install a flash unit, you just slide the mounting foot of the flash into the accessory shoe. No electrical connection is made between camera and flash - it's just a simple and convenient way to attach the flash unit to the camera. Subsequent accessory shoes have been built as part of the camera and usually rest on top of the camera's pentaprism; others are separate items that you mount on the camera body when you need them. Some like the Nikon early professional camera has special dedicated which was designed around the rewind knob.

**Aberration.** Failing in the ability of a lens to produce a true image. There are many forms of aberration and the lens designer can often correct some only by allowing others to remain. Generally, the more expensive the lens, the less its aberrations (More attention to optical quality). While no single lens is called a 'perfect lens'. The "ideal" lense would reproduce a subject in a faithful, clearly defined image on film. Aberrations, which can be divided into six basic faults, affect the Ideal performance in an optical system.

- a) Spherical aberration. Basically, a beam of light passing through a lens parallel to the optical axis converges to form 3 focused image on the film. Spherical aberration is the term for an optical fault caused by the spherical form of a lense that produces different focus points along the axis for central and marginal rays.
- b) Curvature of field. This optical defect causes points on an object plane perpendicular to the lens axis to focus on a curved surface rather than a plane.
- c) Astigmatism. Rays of light from a single point of an object which is not on the axis of a lense fail to meet in a single focus thus causing the image of a point to be drawn out into two sharp lines, one radial to the optical axis and another perpendicular to this line, in two different planes near the curvature of field.
- d) Coma. This optical defect causes the image of an off-axis point of light to appear as a comet-shaped blur of light. Coma, as well as curvature of field and astigmatism, degenerate the image forming ability of the lense at the rims of the picture.
- e) Distortion. Even if the first four aberrations were totally eliminated, images could result that still have a distorted appearance. For an example, an rectangle may appear as a barrel or pin cushion-shaped object.
- f) Chromatic aberration. This aberration is caused by light rays of different wavelengths coming to focus at different distances from the lense. Blue will focus at the shortest distance and red at the greatest distance. Since the natural rays of light are a mixture of colors, each aberration will give a different value corresponding to each color thus producing blurred images.

**Add-on Lens** - Some point and shoot digicams have a filter thread on the front of the fixed lens that will enable the attachment of an additional lens. Usually wide-angle or telephoto.

**AE** - Auto Exposure. When the camera is set to this mode, it will automatically set all the required modes for the light conditions. I.e. Shutter speed, aperture and white balance. The 3 types are:

- **Program Mode**. The camera will choose the shutter speed and aperture automatically, effectively making your SLR a “point-and-shoot”. It will normally assign a shutter speed of 60th of a second or higher if possible.
- **Aperture Priority**. You choose the aperture setting and the camera will automatically choose the shutter speed according to the lighting conditions. Best setting for controlling the depth of field.
- **Shutter Priority**. You choose the shutter speed and the camera will select the correct aperture as long as there is enough light. Good for sports or action photography where you need control over the shutter speeds.

**AE Lock**. This enables you to lock the current exposure reading and re-frame the shot using the same setting. A half-press of the shutter is normally required to activate this function, fully pressing only when you want to capture the image.

**AF. Auto Focus.** All digicams and most modern SLR lenses have this function now. The lens automatically focuses on the subject as quick as the eye. The only difference is that with an SLR you can normally select manual focus if necessary.

**Aliasing.** This is an effect caused by sampling an image at too low a rate. It causes rapid change (high texture) areas of an image to appear as a slow change in the sample image. Once this has happened, it is extremely difficult to reproduce the original image from the sample.

**Ambient Light.** The available natural light completely surrounding a subject. Light already existing in an indoor or outdoor setting that is not caused by any illumination supplied by the photographer i.e. not by artificial light source.

**Angle of View.** This is calculated by the focal length of the lens and the size of the image sensor. The 35mm equivalents differ according to the sensor size.

**Anti aliasing.** This is the process whereby you can reduce the “Stepping” effect on your images, by smoothing the edges where individual edges are visible. A great program for correcting this is Genuine Fractals by LizardTech. It is a plug-in for Photoshop.

**Aperture.** The lens opening that allows more, or less light onto the sensor formed by a diaphragm inside the actual lens.

**Aperture Priority AE.** When using this mode, the user selects the aperture giving control over the Depth of Field. A large aperture letting more light in gives a small depth of field, meaning not much will be in focus. Whereas a small aperture, not letting much light in, will give a greater depth of field or more will be in focus from the front to back of the image.

**APO.** Apochromatic. Having the ability to bring all colours of the visible spectrum to a common plane of focus, within close tolerances, usually refer to a lens with such superior colour correction. Also refer to “ED”, “LD”, “SD”, “UD”.

**Aperture ring.** A ring, located on the outside of the lens usually behind the focusing ring, which is linked mechanically to the diaphragm to control the size of the aperture; it is engraved with a set of numbers called f-numbers or f-stops.

**Artificial light.** Light from a man-made source, usually restricted to studio photo lamp and domestic lighting. When used to describe film (also known as Type A or Type B) invariably means these types of lighting.

**Archive.** A collection of data in long term storage, usually the hard drive on your PC or an external hard drive.

**ASA.** American Standards Association. Group that determining numerical ratings of speed for US made photosensitive products. eg films. In 1982, its role and its influence was narrow down by the establishment of the ISO (International Standards Organisation).

**Aspect Ratio.** The ration of horizontal to vertical dimensions of an image. For example, 35mm slide film = 3:2, TV = 4:3, HDTV = 16:9, 4x5 Film = 5:4.



**Aspherical Lens.** A lens with edges flattened so that it is not a perfect sphere. These produce a much superior image.

**Automatic Exposure.** The camera sets the shutter speed and aperture for the correct exposure according to the light.

**Automatic Focus.** The lens on the camera focuses automatically when the shutter is half pressed. The viewfinder normally has focussing points shown to assist the user in knowing what will be in focus.

**AVI.** Movie clip in Windows AVI format. A lot of digicams now have this feature for producing small video clips.

**AWB.** Automatic White Balance. Most digital cameras have this feature where the camera sets the white balance. Override is available in most DSLR's.

## **B**

**B & W .** Abbreviation for Black and White.

**Back Lit.** Meaning the subject is lit from behind which can cause underexposing. Is also used for portrait photography for special effects and bringing catchlights to the hair.

**Backlight.** The illumination for a colour LCD display on digital cameras or phones.

**Banding.** An artefact of colour gradation in computer imaging. When graduated colours break into larger blocks of a single colour, the smooth look of a proper gradation is reduced.

**Barrel Distortion.** A common geometric lens distortion causing an acquired image to pucker towards the centre and be *rounded* along the outer edges.

**Beauty Dish.** Light modifier used in a studio setting, that has two dishes facing each other, the light is reflected from one smaller dish into the other being much larger, and onto the subject. The result is a soft but rather directional illumination. Used widely in the fashion and glamour portrait industry, particularly Hollywood.

**Bit.** The smallest unit of memory. The word comes from *binary* and *digit* or 1 and 0. Also sometimes known as on and offs.

**Bit Depth.** Refers to the colour or grey scale of each individual pixel. For example a pixel with 8 bits per colour (red, green and blue), gives a 24 bit image. 24 bit resolution is 16.7 million colours.

**Bitmap.** The method of storing information that actually maps an image pixel bit by bit. Formats include; .bmp, .pcx, .pict, .tif, .tiff, .gif. Most picture files are bit-mapped.

**Blooming.** An effect caused by overexposing a CCD or sensor to too much light. This can cause

distortions of the subject and/or colour.

**BMP.** Bitmapped graphics file format which is popular with Windows PC's. It is an uncompressed file format like a TIFF.

**Borderless.** Quite simply, this means a printed photograph with no border around it.

**Bracketing.** Can apply to flash or exposure. It is used to create usually 3 photographs. One photo is exposed by the cameras meter automatically, one under exposed and one overexposed by a predetermined number of stops. Also "exposure bracketing".

**Brightness.** Value of a pixel in a digital image giving its value of lightness from black to white, with 0 being black and 255 being white.

**Buffer.** Temporary storage areas held in your camera or computers RAM. This acts as a temporary holding area for data that will be manipulated by the CPU before saving it to another device. For example if you are shooting in continuous mode, when the RAM buffer on your digital camera is full it will slow to a much slower rate while the buffer empties to your compact flash card or other device.

**Bulb Setting (B).** Term used for a long exposure setting normally more than 30 seconds. The start of the exposure is made by pressing the shutter, only ending when the shutter button is released. Excellent for night photography and a remote release is recommended to prevent camera shake as you press the shutter button.

**Burst Mode.** Also know as continuous mode or "Auto wind" on older SLR's. However, today's Digital SLR's have burst modes of up to 8 frames per second. Great for sports and action shots.

**Byte.** A collection of 8-bits of memory in a computer. I.e. 8 bits is a Byte, 1000 bytes is a Kilobyte (KB) or 8000 bytes, 1000Kb is a Megabyte (MB) or 8,000,000 bytes and so on.

## C

**Calibration.** The act of adjusting the colour of one device to match that of another. For example when you match the calibration of your screen to that of your printer to ensure what you see is what you print. It is also used in the film SLR's Canon EOS-3 and EOS 5 which have eye-controlled focussing. You calibrate the cameras focussing to where your eye is looking in the viewfinder. (Some fighter planes also have this. The missile follows the trajectory of the pilot's eye).

**Card Reader.** Used for transferring data from your flash memory card to your PC. A better way of transferring your image files than connecting the *camera* to your PC. Sometimes the cameras circuitry can become corrupt. Better to fry a memory card than your camera.

**CCD (Charged Coupled Device).** This is a light sensitive chip used in your digital camera for image gathering. The CCD Pixels gather the colour from the light and pass it to the shift register

for storage. CCD's are *analogue* sensors, the digitising occurs when the electrons are passed through the A to D converter. This "Analogue to Digital" converter converts the analogue signal to a digital file or signal.

**CD.** Compact Disc. You should have heard of these by now. Storage media capable of holding around 650MB of data. These come in 2 forms;

- **CDR** - Compact Disc Recordable. Can only be used once, no matter how little information you write to it. Can be re-read many times.
- **CDR-W** - Compact Disc Re-writeable. This can be erased and re-used many times.

**Centre - Weighted.** Term used to describe an automatic exposure system that uses just the centre portion of the image to adjust the overall value. So in effect, the exposure will be weighted to what you see towards the centre of your viewfinder.

**CF.** Compact Flash card. Used in your digital camera to record images. Storage space ranges from 16MB up to 12GB. A company in Japan is currently developing a CF card that will store 2TB of information or 2,048 Gigabytes.

**Channel.** One piece of information stored with an image. For example, a true colour image has 3 channels, red, green and blue.

**Chroma.** The colour of an image element or pixel. A chroma is made up of saturation plus the hue values, but is separate from the luminance value.

**Chromatic Aberration.** Also known as *purple fringing*. It is fairly common in 2MP digital cameras and above, especially if they have long telephoto lenses. You can see it when a dark area is surrounded by a highlight. In between the dark and light, you may see a band of purple pixels that shouldn't be there. There are ways of removing this which I have covered in the Photoshop section.

**CIFF.** Camera Image File Format. This is an agreed type of image storage used by many camera makers.

**CMOS.** Complementary Metal Oxide Semiconductor (now you can see why it is abbreviated) - Another imaging system used by digital cameras. These produce lower amounts of power consumption, but are not as popular as the CCD sensors used in most digital SLR's

**CMS.** Colour management system. A software program designed to ensure colour matching and calibration between video and/or computer monitors and any form of hard copy output.

**CMYK.** Cyan, Magenta, Yellow and Black. Colours used by most printers to produce your prints. Colour shifts can be caused when the colour management system tries to convert your PC's RGB files to CMYK. Before printing, try converting your images to CMYK and see what the difference is.

**Codec.** A Codec compresses information to enable it to be sent across a network much faster. It will also *decompress* information received via the network.

**Colour Balance.** The accuracy with which the colours captured in the image, match the original scene.

**Colour Cast.** This is a very unwanted tint of one colour in an image caused by the wrong amount of Cyan, Magenta and Yellow. It can be corrected using your editing software.

**Colour Correction.** To correct or enhance the colours within an image.

**Colour Depth.** Digital Images can approximate colour realism but the process is referred to as colour depth, bit depth or pixel depth. Most modern computer displays use 24 bit true colour. It displays the same number of colours that the human eye can discern, about 16 million.

**Colour Space.** Digital cameras use known colour profiles to generate their images. The most common is sRGB or Adobe RGB. This along with all of the other camera data is stored in the Exif header of the Jpeg file. The *colour space* information ensures that graphic programs and printers have a reference to the colour profile that the camera used at the time of taking the exposure.

**Colour temperature.** Description of the colour of a light-source by comparing it with the colour of light emitted by a (theoretical) perfect radiator at a particular temperature expressed in kelvins (K). Thus “photographic daylight” has a colour temperature of about 5500K. Photographic tungsten lights have colour temperatures of either 3400K or 3200K depending on their construction.

**Compact Flash.** See CF. This is the most commonly used type of memory. It is small, removable and available in a wide range of sizes up to 12GB.

**Composition.** The pleasing arrangement of the elements within a scene-the main subject, the foreground and background, and supporting subjects.

**Compression.** A Digital photograph creates an image file that is enormous. To enable image files to become smaller and more manageable cameras employ some form of compression such as JPEG. RAW and TIFF files have no compression and take up more space.

**Continuous Autofocus.** As it says. The auto focus system is continuously working on focussing on the subject.

**Continuous Servo (Nikon’s term).** AF Focus detection continues as long as shutter release button is lightly pressed and the reflex mirror is in the viewing position. Useful when the camera-to subject distance is likely to change.

**Contrast.** The measure of rate of change of brightness in an image.

**CRW.** The RAW CCD file format used by Canon Digital Cameras. Comes from Canon RAW.

**D**

**Dark Frame.** A noise reduction process where a camera takes a *second* exposure of a black frame after the camera takes a long exposure image. The image **noise** is easily identified in the black frame shot and is then electronically removed from the actual image. This helps to reduce the amount of **hot** pixels that normally show up in long exposure shots from digital cameras.

**DC.** Direct Current. Battery power such as 9v DC battery

**Decompression.** Process by which the full data content of a compressed file is restored.

**Dedicated Flash.** An Electronic Flash Unit that is made to be used directly with a specific make or model of a camera. Canon, Nikon Minolta and Olympus for example, all have electrical contacts in the hotshoe which passes TTL (through the lens) metering and AF range information to and from the flash unit or speedlight. You **cannot** interchange flash units and cameras. I.e. a Nikon speedlight on a Canon camera.

**Depth of Field.** (DOF). The range of items in focus in an image. This is controlled by the focal length and aperture opening of a lens. A large or wide aperture gives a shallow depth of field (not much range in focus) and a smaller or narrow aperture give a large depth of field (more range in focus).

**Diffuse Lighting.** Lighting that is low or moderate in contrast, such as on an overcast day.

**Diffusing.** Softening detail in a print with a diffusion disk or other material that scatters light.

**Digital Film.** Quite simply that. Solid state flash memory cards in place of emulsion film.

**Digital Zoom.** A digital magnification of the centre 50% of an image. These give less than sharp images because the new zoomed image has been interpolated. Don't be swayed by the **incredible 500% zooms** on some cameras, the images won't be really acceptable. The optical zoom gives much more clarity to an image.

**Digitisation.** The process of converting analogue information into digital for use by a computer.

**Diopre Adjustment.** This adjusts the optical viewfinder's magnification factor to suit the eyesight of the cameras user. There should be a knob or dial near the viewfinders eyepiece, however, not all cameras have this feature.

**DOF.** Abbreviation of Depth of Field.

**Download.** Term used for the transference of image data from the camera to your computer. Can be done via a serial port or the faster USB port. Downloads can also be done via Bluetooth or Infra-red without the need for cables.

**DPI.** Dots per Inch. This is a measurement value used to describe the resolution of a display screen or that of a printer

**DPOF.** Digital Print Order Format. This allows you to embed printing information on your memory card. You just select the photographs that you want printed and how many prints to be

made. Some photo printers such as Pictbridge use this information at print time.

**DRAM.** Dynamic Random Access Memory. A type of volatile memory, which is lost when the power is turned off.

**DRAM Buffer.** All digicams have a certain amount of fixed memory to facilitate image processing before the finished picture is saved to the flash memory card. Cameras with burst more have a larger buffer of 32MB or bigger to cope with the files however, they are more expensive.

**DSLR.** Digital Single Lens Reflex (SLR). Camera with interchangeable lens.

**DVD.** Digital Versatile Disk. DVD is DVD recorded on a DVD-R or DVD-RW disc.

**Dye Sub.** Dye sublimation is a printing process where the colour dyes are thermally transferred to the printing media. The printers use CMYK colour format. The paper is run in and out of the printer 4 times, once for each colour (C, M and Y) and a fourth time when a protective overcoat is applied. Dye sub is continuous tone printing, it prints tiny square dots each of which is denser in the centre and lighter on the edges. The dyes are transparent so different coloured dots can be printed on top of each other to form any one of 16 million colours.

**Dynamic Range.** This is a measurement of the accuracy of an image in colour or grey level. More bits of dynamic range results in much finer gradations being preserved.

## **E**

**EPP .** Enhanced Parallel Port. This is the newer, hi-speed, bidirectional printer port on modern PC's.

**E-TTL.** Canon's "Evaluative Through The Lens" exposure system that uses a brief pre-flash before the main flash in order to calculate the correct exposure.

**EV.** Exposure Value. The ability to override the auto exposure system to under or over expose the image.

**EXIF.** Exchangeable Image File Format. The embedded information about camera and exposure for each image. Most decent graphics programs can read this information.

**Exposure.** Amount of light that hits the image sensor of film controlled by the shutter speed and aperture.

**Exposure Bracketing.** Camera will take 3 or 5 images and varies the exposure up or down for each photograph ensuring at least one will be well exposed.

**Exposure Compensation.** You can lighten or darken the image by under or over exposing the image. (EV compensation).



# F

**F-number.** The numbers on the lens aperture ring and the camera's LCD (where applies) that indicate the relative size of the lens aperture opening. The f-number series is a geometric progression based on changes in the size of the lens aperture, as it is opened and closed. As the scale rises. each number is multiplied by a factor of 1.4. The standard numbers for Calibration are 1.0, 1.4, 2, 2.8, 4, 5.6, 8, 11, 16, 22, 32, etc., and each change results in a doubling or halving of the amount of light transmitted by the lens to the film plane. Basically, calculated from the focal length of the lens divided by the diameter of the bundle of light rays entering the lens and passing through the aperture in the iris diaphragm.

**F-Stop .** Number indicating the size of the aperture. It is an inversely proportionate number as in F2.8 is a large opening and F16 is a small opening.

**File.** A collection of information like data, text or images which are saved on a CD, DVD or hard drive.

**File Format.** Type of program or data file. Includes JPEG, TIFF and BMP

**Fill-flash.** A method of flash photography that combines flash illumination and ambient light, but does not attempt to balance these two types of illumination. Also see "balance fill flash"

**Filter.** A colored piece of glass or other transparent material used over the lens to emphasize, eliminate, or change the color or density (ND) of the entire scene or certain areas within a scene. Also see "colour temperature", "UV". Technically, it explained as a piece of material which restricts the transmission of radiation. Generally coloured to absorb light of certain colours. Can be used over light sources or over the camera lens. Camera lens filters are usually glass either dyed or sandwiching a piece of gelatin in a screw-in filter holder.

**FireWire.** Officially known as the IEEE 1394 protocol. A high speed data transfer interface used on digital camcorders and the more expensive Digital SLR's.

**Firmware.** A micro program often used and stored in ROM. Normally the ROM based software is in all computer based products from PC's to digital cameras. You will often see firmware updates for electronic goods that deal with problem issues.

**Fisheye lens.** Ultra-wide angle lens giving 180 angle of view. Basically produces a circular image on 35 mm, 5-9 mm lenses showing whole image, 15-17 mm lenses giving a rectangular image fitting just inside the circle, thus representing 180 across the diagonal.

**Fixed Aperture.** Aperture remains constant regardless of the lens' focal length. I.e. The Canon "L" series have a constant fixed aperture when zooming.

**Fixed Focal Length.** Basically a non zoom lens. 100mm, 50mm, 200mm etc.

**Fixed-Focus.** Describes a non-adjustable camera lens, set for a fixed subject distance.

**Fixed-Focus Lens.** A lens that has been focused in a fixed position by the manufacturer. The user does not have to adjust the focus of this lens, applies on most entry or disposable cameras.

**Flash.** The artificial light source in the dark. Electronic flash requires a high voltage, usually obtained from batteries through a voltage-multiplying circuit. It has a brief, intense burst of light, usually used where the lighting on the scene is inadequate for picture-taking. They are generally considered to have the same photographic effect as daylight. Most flash will correct the color temperature back to 5000 kelvin - the daylight color. You can play around with filters mounting on the flash head for some specific effects or alter the color if necessary. Modern flash has multiple TTL flash exposure control functions and even extend to autofocus control. Some specialized flash are high speed repeating flash which can use for stroboscopic effect, UV-flash for ultra violet light photography etc.

**Flash Bracket.** Often called handle mount flash. It comprised of one arm of the L-shaped bracket extends under the camera body and uses the camera's tripod socket to mount the camera on the bracket. The vertical arm of the bracket serves as a handle and mounts a flash unit in an accessory shoe often on top of the handle portion, but there are other methods. Flash mounted in a bracket usually requires a separate electrical cord to make the electrical connection between camera body and flash unit.

**Flash Exposure Bracketing.** Enables a photographer to automatically bracket exposures at varied flash output levels, in TTL auto flash shooting, without changing the shutter speed and/or aperture, this is a one of the top flash feature that can only be found on some higher ranked cameras.

**Flash synchronization.** Timing of the flash coincides with release of the camera's shutter. There are two types of synchronization: Front-Curtain Sync, which fires the flash at the start of the exposure, and Rear-Curtain Sync, which fires the flash at the end of the exposure. Also see "Rear-Curtain Sync", "Front-Curtain Sync", "X setting".

**Flash sync speed.** Exposure time with a focal-plane shutter is measured from the instant the first curtain is released, to begin its travel across the frame, until the instant the second curtain is released, to begin its travel across the frame. When the first curtain reaches the end of its travel, the film frame is uncovered as far as the first curtain is concerned, so it closes the electrical contacts for X sync and fires the flash instantly. Shutter speed at which the entire film frame is exposed when the flash is fired in flash shooting. Most modern camera with vertical travel shutter curtain have faster flash sync speed like 1/250 sec. or slower, some top camera model like Nikon F5, changeable to 1/300 sec. with the Custom Setting.

**Flash output level compensation.** A control used to adjust a TTL auto flash operation, enabling an increase or decrease of flash output to lighten or darken the flash effect.

**Flash shooting distance range.** The distance range over which a flash can effectively provide light. Flash shooting distance range is controlled by the amount of flash output available. Each automatic Speedlight's flash output varies from maximum duration to minimum duration. Close-up subjects will require lower (to minimum) output while more distant subjects will require more light up to the maximum output. The flash shooting distance range varies with the aperture,

film speed, etc. Also see Guide Number.

**Flash Memory Card.** A storage medium that uses by most digital cameras. It resembles film in conventional photography. We have an detailed article relating to this.

**Flare.** An overall decrease in contrast caused by light being reflected off, instead of transmitted through, a lens surface; controllable through the use of multilayer coating of individual lens elements in a lens; aggravated by unclean lens surfaces on front and rear lens elements or filters.

**Flat Bed Scanner.** Optical Scanner in which the original image remains stationary while the CCD sensors pass over or under it. The scanned image is held flat by the lid hence the name.

**Focal Length.** A lens' angle of view. Such as Wide angle, standard or telephoto.

**Focus Assist.** Cameras with this send out a light, either normal or infra red to light up the subject to assist with the autofocus in low light or darkness.

**Focus Lock.** Focus lock means pre-focussing the subject and re-framing by moving the camera. This is done by half pressing the shutter to focus and fully pressing to expose. Done to ensure crisp, sharp eyes for example.

**Frame.** One of many still pictures that make up a video.

**Frame Rate.** Number of frames that are shown or sent each second. Live action is around 30 frames per second.

**Full Bleed.** Otherwise known as "Borderless" printing. Means the ink limit extends to all 4 edges of a print.

## G

**Gamma .** Measure of the amount of contrast in an image according to the properties of a gradation curve. High contrast = High Gamma and Low = Low.

**Gamma Correction.** With reference to displaying an image accurately on a computer screen, Gamma correction controls the overall brightness of an image. Images which are not properly corrected can look either too dark or bleached out.

**Gamut.** This is the range of colours that are available in an image or output process. Gamut is generally used in describing the capabilities of a printer to reproduce colours accurately and vibrantly.

**GIF.** A graphic file format mainly used for Web graphic or small animated (GIF) files. Not good for photographs as it only contains a maximum of 256 colours.

**Gigabyte (GB).** A gigabyte is a measure of computer memory or disk space consisting of about

one billion bytes (a thousand megabytes). The **actual** value is 1,073,741,824 bytes (1024 megabytes).

**Gradation.** A *smooth* transition between black and white, one colour and another or colour and no colour.

**Grey Level.** This is the brightness level of a pixel representing its lightness from black to white. It is usually defined as a value from 0 to 255, with 0 being black and 255 being white.

**Grey Scale.** A term used to describe an image containing shades of grey rather than colour. Most commonly referred to as a black and white photograph.

**Guide Number.** The power output rating of a speedlight flash unit.

## H

**Halftone Image.** An image reproduced through a special screen made up of dots of various sizes, to simulate shades of grey in an image. Normally used for magazine or newspaper reproduction of images. It is also how modern inkjet printers work. Half toning or dithering are the methods used to produce a smooth gradation of colour versus distinct bands of colour or moiré patterns.

**HD.** Hard drive (HDD). This is the internal, large-capacity storage unit in home computers, normally the C-Drive

**HDTV.** High Definition Television. New video standard that will give 1,125 lines in the United States instead of the traditional 525 NTSC standard lines. The aspect ratio is 16:9 versus 4:3 of normal TV's.

**Histogram.** A histogram is a bar graph analysis tool that is used to identify contrast and dynamic range of any image. Histograms are found in the more advanced digi-cams and software programs (graphic editors), such as Adobe Photoshop 7, CS or Elements, and are used to manipulate images. The histogram shows a scale of 0 - 255 (left to right) with 0 being black and 255 being white.

**Hot Shoe.** A flash connector generally found on the top of the camera that lets you attach an external flash unit and trigger it in sync with the cameras shutter.

**Hue.** A term used to describe the complete range of colours of the spectrum. Hue is the component that determines just what colour you are using. In gradients where you use a colour model in which hue is a component, you can create some rainbow effects.

## I

**i-TTL.** Similar to Canon's "E-TTL", Nikon's new flash exposure system is used on the new D70 DSLR and SB-600 and SB-800 Speedlights.

**ICC Profile.** “The International Colour Consortium” is a group that sets the standard guidelines for colour management in the imaging world. Most monitors, printers and scanners (as well as digital cameras), usually come with a driver disc for Windows and Mac systems that includes ICC profiles for that particular device. Colour profiles simply let one piece of hardware or software know how another device or image has created its colours and how they should be interpreted or reproduced.

**IEEE-1284.** High-speed, bidirectional parallel port specification used on Windows PC’s, used mostly for printers.

**IEEE-1394.** Better known as **FireWire**, it is a high-speed input or output bus used by digital video devices, film or flatbed scanners, and high end digital still cameras & PC’s.

**iESP.** Olympus’ exposure metering system.

**iLink.** Sony’s term for the IEEE-1394 FireWire data port found on Sony camcorders.

**Image Resolution.** This relates to the number of pixels per unit length of image. E.g. pixels per inch, pixels per millimetre, or pixels wide etc..

**Image Sensor.** Digital cameras use an electronic image sensor (CCD or CMOS), to gather the image data, whereas a traditional camera exposes light to emulsion film,

**Image Stabilization (IS).** An optical or digital system built in to a lens for removing or reducing camera movement, most effective with telephoto or telephoto zoom lenses. Can be found on most of Canon’s “L” range of lenses as well as mid-range lenses such as the EF 28-125 IS USM

**Inkjet.** A type of printer that “sprays” dots of ink onto paper to create the image rather than paint or laser it on. Modern inkjet printers now have resolutions of up to 2880dpi and create excellent photo quality prints.

**Interlaced.** This is the term used to describe an image sensor that gathers its data by first processing the odd lines, and then processing the even lines.

**Interpolated.** Most software programs can enlarge image resolution beyond the actual resolution by adding extra pixels. This normally decreases the quality of the image but can be enhanced by a program (or plug in for Photoshop) such as LizardTech’s “[Genuine Fractals](#)“.

**Intervalometer.** (Or Interval Recording) Another term for Time Lapse Photography. You can capture an image or images at preset intervals automatically. Good quality remote releases have this function built in, meaning you don’t have to stand around pressing the shutter every 5 or 10 seconds.

**IR.** Infra Red. This uses a beam of light that is invisible to us humans to either control a device without wires or as a method of transferring data from camera to computer (or printer) without cables. Some cameras also employ infrared in the auto focusing system.

**ISO.** Or ASA. (International Standards Organization). The speed or light sensitivity of a captured image is rated by ISO numbers such as 100, 400, 800 etc. The higher the number, the more sensitive to light it is. Similar to film, the higher speeds usually bring on more electronic “noise” so the image gets grainier. An excellent program for cutting down this “noise” is Neat Image.

## J

**JFIF** . Also known as EXIF , this is a specific type of the JPG file. format.

**JPEG.** Joint Photographic Experts Group. This is the name of the committee that designed the standard image compression algorithm. JPEG was designed for compressing full colour or grey scale digital images of natural scenes. It doesn't work so well with non-realistic images, such as cartoons however. JPEG does not handle the compression of black and white (1 bit-per-pixel) images or moving pictures.

**JPEG - 2000** . The new JPEG compression standard that may start to be used in digital cameras and software. It will feature higher compression with less image quality loss.

**JPG.** This is the most common type of compressed image file format used in modern digicams. It is a “lossy” type of image storage because even in its highest quality mode, there is compression used to minimize its size.

## K

**KB** . A Kilobyte of data, or an abbreviation for keyboard.

## L

**Landscape Mode.** This is when you hold the camera in its normal, horizontal orientation to capture the image. The opposite is “portrait mode”.

**LCD.** (Liquid Crystal Display). There are 2 types. First, a TFT high-resolution colour display device like a very small TV set. Secondly, a monochrome (B and W) information display using just black alphanumeric characters on a grey or green background.

**LED.** (Light Emitting Diode). This refers to all the little red, green and yellow indicator lights used on most cameras, power supplies and electronic devices.

**Li-ion.** (Lithium ION). Some digicams are packaged with a lithium-ion re-chargeable battery pack. Lithium ION batteries are lighter but are more costly than Ni-MH or Ni-Cd (NiCad) rechargeables. One advantage is that Lithium cells can be recharged regardless of the amount of discharge; also, they are lighter and maintain a charge much better in colder temperatures than conventional batteries. Li-ion also holds a charge for longer when idle.

**Lossless.** Refers to storing an image in a non-compressed format, such as TIFF.



**Low Pass Filter.** Most DSLR's (Digital SLR's) employ a Low Pass Filter (LPF) or Anti-Aliasing (AA) filter in front of the sensor to help eliminate problems with colour aliasing (moiré).

## M

**Mac.** Refers to the Macintosh computers. I.e. Apple MAC.

**Macro.** Lenses with this feature can focus very close (less than 8") for taking pictures of small objects at a 1:1 ratio.

**mAh.** (milliAmperehour). A rating used in the consumption of power of an electronic device such as an LCD, or the storage capability of a device like an NiMH or Nicad rechargeable battery.

**Matrix Metering.** Most digicams have a matrix metering option which uses 256 areas of the frame to calculate the best overall exposure value.

**MB.** (MegaByte). Memory term meaning 1024 Kilobytes. Used to denote the size of a flash memory card such as 4MB, 8MB etc. MB is often confused with Mb (megabit), there's 8 bits in a byte so  $256\text{Mb} = 32\text{MB}$ .

**MD.** (Minidisk). Digital recording media similar to a small floppy disc. Common for audio data and has been used on several digicams sold in Japan and Europe.

**Megapixel.** This is the CCD (or CMOS) resolution of one million pixels. Digicams are commonly rated by Megapixels. You multiply the horizontal resolution by the vertical resolution to get the total pixel count. For example  $2590 \times 1920 = 5$  Megapixels.

**Memory Stick.** A flash memory card type from Sony. They resemble a stick of chewing gum and vary in size.

**Memory Stick Pro.** The year 2003 upgrade to Sony's Memory Stick flash cards. The new MS Pro cards are available in 256MB, 512MB and 1GB capacities and offer faster read/write times. All of Sony's digicams made in 2003 or after can use MS Pro cards.

**Metering.** Metering is used to calculate the exposure from the existing light conditions. Includes Matrix Metering, Spot metering and Center-weighted metering.

**Microdrive.** IBM/Hitachi mini hard disk drive for digital cameras and PDA devices. Packaged in a CompactFlash Type II housing and available in 170MB, 340MB, 512MB, 1GB, 2GB, 4GB and above as the years progress!

**MiniCD.** These are small diameter (3 inch) CD discs. Mini CD-R and Mini CD-R/W discs are used in the Sony Mavica "CD" series (CD200, CD250, CD300, CD400 and CD1000) digicams.

**MMC.** Multi-Media Card. A flash memory card used in some digicams and MP3 players. The MMC is identical in size and shape to the Secure Digital (SD) flash cards.

**Moiré.** A visible pattern that occurs when one or more halftone screens are mis-registered in a colour image. Often produces a coloured checkerboard (or rainbow) pattern.

**MOV.** Apple QuickTime Movie file format.

**Movie clip.** A sequence of motion captured in AVI, MOV or MPEG formats. More and more digital cameras can now capture short movie clips, many can also record the sound.

**Motion JPEG.** A video clip composed of a sequence of JPEG compressed images. Sometimes abbreviated to MPEG (see MPEG below), although they are slightly different. The main difference is that MPEG provides temporal compression, while MJPEG simply provides spatial compression.

**MP.** Abbreviation of Megapixel, i.e. 5MP or 8MP.

**MPEG.** Motion JPEG movie file. See “Movie clip” The digital video compression standard agreed upon by the Motion Picture Expert Group from the motion picture computer industry.

**MPEG-EX.** Motion JPEG movie file created by Sony cameras. This was the first motion video recording sequence mode that was limited in length only by the amount of available storage space.

**MPEG-HQX.** Motion JPEG movie file created by Sony in 2002, whose cameras incorporate the MPEG-HQ (high quality, full-screen) and the unlimited recording capability of MPEG-EX in 320x240 resolution.

**MPEG-VX.** Motion JPEG movie file created by Sony digicams in 2003. Its VGA resolution (640x480) at 16fps with audio and the length is limited only by available storage space. VX Fine is 30fps or very high quality.

**Multi-Pattern Metering.** Exposure is determined by reading many different zones in the frame. This gives a more optimum exposure than those cameras using just a central zone metering system.

**Multi-Point Focusing.** The autofocus systems uses several different portions of the image to determine the correct focus.

**Multi Zone Focusing.** Many digital cameras now offer multi zone focusing. The camera will automatically determine which zone (centre, left, right, upper or lower) to use to perform the auto focusing. You no longer have to make sure that your subject is in the centre of the viewfinder in order to be correctly focused.

**N**

**NEF.** (Nikon Electronic Format). The Raw image data file format used by the Nikon DSLR (D2x, D100, etc) also some Coolpix digicams.

**NiCd.** Nickel Cadmium (Nicad). A type of rechargeable battery. NiCad was the original type of rechargeable battery and has been all but replaced by the NiMH type.

**NiMH.** (Nickel-Metal Hydride). A type of rechargeable battery. NiMH is the more modern type of rechargeable battery and has been touted as having no memory effect as is common with Nicad type batteries when they are charged before they have been fully discharged.

**Noise.** Relates to pixels in your image that were misinterpreted. Normally occurs when you shoot a long exposure (beyond 1/2-second) or when you use the higher ISO values from 400 or above. It appears as random groups of red, green or blue pixels. Programs such as [Neat Image](#) can remove most noise from an image.

**Noise Reduction.** Some cameras that offer long shutter speeds (more than 1 second) usually have a noise reduction (NR) feature that is either automatic or can be enabled in the menu. This is to help eliminate random “hot” pixels and other image noise. Can add a more time to the process as it needs to write the new image data along with the recorded image. Again, see [Neat Image](#).

**NTSC.** Term used to describe the 60 field video output (television) standard used in the U.S. and Japan.

## O

**OEM.** (Original Equipment Manufacturer). Means that a piece of equipment is made by one company but labelled for (and sold by) another company.

**Optical Viewfinder.** An eye level viewfinder that is used to compose the photograph.

**Optical Zoom.** Means that the camera has a real multi focal length lens, this is not the same as a “Digital Zoom” which magnifies the centre portion of the picture. Optical zoom gives better quality than a digital zoom.

**ORF.** (Olympus RAW format). The un-processed image format created by modern Olympus Digital SLR’s and high end Digicams.

**Orientation Sensor.** A special sensor in some cameras that can tell when you turn the camera round to portrait orientation to take a vertical shot. It also tells the camera to display it that way later when viewed on a monitor or TV screen during playback.

**Overexposure.** This is an image that appears much too bright. The highlights and colours are totally lost and usually unrecoverable even by top software. Either the shutter speed was too long or the aperture was too wide.

# P

**PAL.** The 50 field video format used mostly in Europe and other places outside of the U.S. and Japan.

**Palette.** A thumbnail of all available colours to a computer or devices (much like an artist's palette). The palette allows the user to choose which colours are available for the computer to display. The more colours the larger the data and the more processing time required to display your images. If the system uses 24-bit colour, then over 16.7 million colours will be included in the palette.

**Panorama.** This means capturing a series of images to create a picture wider than what you could capture in a single image, by "Stitching" the photographs together. Needs special software to allow and help you do this.

**Parallax.** An effect seen in close-up photography where the viewfinder does not see the same as the lens. This is normally due to the offset of the viewfinder and lens. This is not an issue if you are using the LCD as a viewfinder or if your camera is an SLR..

**PC.** In camera terms it denotes a type of flash synch connector, popular on most film and high end digital cameras. Otherwise, it means Personal Computer.

**PC Card.** Refers to a credit card sized device which can be a flash memory card, a network card, a modem or even a hard drive. Comes in two types; The type I/II which is a single slot height and type III which requires a double height card slot.

**PCMCIA.** These are the card slots found on modern laptop computers to enable the user to insert PC Cards. There are PCMCIA adapters for Compact Flash (CF), SmartMedia (SM), Secure Digital (SD), MultiMediaCard (MMC) and Memory Stick (MS) flash cards.

**PictBridge.** This is a new standard for direct USB printing from digital cameras to inkjet and dye sub photo printers. It does not need the use of a computer.

**PIM.** (Print Image Matching). Epson's new standard of embedded colour and printing information for digital cameras. Many of the camera manufacturers have joined with Epson and now embed the PIM information in the Exif header of the JPEG images created.

**Pin-Cushioning.** This is a common geometric lens distortion causing an acquired image to pucker toward the centre of the image, usually found at telephoto focal lengths.

**Pixel.** The individual imaging element of a CCD or CMOS sensor, or the individual output point of a display device. This is what is meant by the figures 640x480, 800x600, 1024x768, 1280x960 etc., when dealing with the resolution of a particular digicam. Higher numbers are best.

**Pixelization.** The stair stepped appearance of a curved or angled line in digital imaging. The smaller the pixels, and the greater their number, the less apparent the "pixelization" of the

image. Also known as the “jaggies”.

**Plug-n-Play.** This is an automated installation process used in Microsoft Windows to connect peripherals to a computer. When new devices are plugged into the computer the computer automatically recognizes the device and prompts the user to choose setup options and finish installation.

**Polarizer. (Polarising Filter).** A filter for eliminating glare and reflections which attached to the front of your lens (normally just SLR's). Just like your polarized sunglasses it will get rid of glare, the polarizer filter does the same for your digicam. There are 2 types of polarising filter, linear and circular. Linear is for film only, it screws up most auto focus systems on digicams. Therefore be sure you use a circular polarizer filter. It can also be used to darken skies and increase the saturation of colours.

**PNG.** (Portable Network Graphics). This is an image file format. It is a compressed file format similar to JPG.

**Point and Shoot.** Term used for a simple, easy to use camera with a minimum of user controls. The camera does everything automatically so you literally just point and shoot.. **PPI.** Pixels Per Inch. A measurement to describe the size of a printed image. The higher the number the more detailed the print will be.

**Pre-Flash.** Some digicams use a low power flash before the main flash to automatically set the exposure and white balance.

**Programmed AE.** The camera chooses the best shutter speed and aperture automatically.

**Prosumer.** Refers to more expensive semi-professional digicams aimed at a consumer market.

## Q

**QuickTime .** A motion video standard created by Apple. QuickTime video sequences can contain an audio track and are stored as .MOV files.

**QVGA.** Refers to Quarter VGA resolution (320 x 240) motion video sequences.

## R

**RAM .** (Random Access Memory). The most common type of computer memory where the CPU stores software, programs, and data currently being used. RAM is usually volatile memory, meaning that when the computer is turned off, crashes, or loses power, the contents of the memory are lost. More RAM usually means faster manipulation or faster background processing.

**Range finder.** This is the viewfinder on most smaller digital cameras and is a separate viewing device which is independent of the lens. It is often above and to the right or left of the lens. It

exhibits a problem known as parallax when trying to frame subjects closer than five feet from the camera so it is advisable to use the colour LCD when shooting close-ups for just this reason.

**RAW.** RAW files store the unprocessed image data at 12 bits per channel. Directly from the camera's imaging chip to its memory storage device. "Lossless" compression is applied to reduce the file size slightly, without compromising the quality. RAW image files must be processed with special software before they can be viewed or printed. These are normally in the form of a plug in for Photoshop or as a standalone product. . The advantage is that you have the ability to alter the white balance, exposure value, colour values, contrast, brightness and sharpness as you see fit *before* you convert this data into the standard JPEG or TIFF format. Professional digital photographers import RAW image data directly into photo-editing programs like Photoshop CS (which comes with a Camera Raw plug-in that works with most popular RAW formats.)

**Red-Eye.** An effect caused by an electronic flash reflecting off the retina at the back of the eye making it look red. Compact cameras with the flash located close to the lens suffer the worst from this problem. Professional photographers use a bracket to hold an external flash unit above and off to the side of the lens to eliminate red-eye. It can also be easily reduced using most post-editing software.

**Red-Eye Reduction Mode.** A special flash mode whereby a pre flash or a series of low powered flashes are emitted before the main flash goes off. This causes the iris of the eye to contract meaning less light gets in the eye, therefore reducing red eye.

**Render.** This is the final step of an image transformation or three-dimensional scene through which a new image is refreshed on the screen.

**Resize.** In photographic terms, this means to take a large image and reduce it in size. Most editing programs offer a resize option. Good for cropping images or get them "Web-ready"!

**Resolution.** The quality of any digital image, whether printed or displayed on a screen, depends on its resolution, or the number of pixels used to create the image. More, smaller pixels add detail and sharpen the edges.

- Optical Resolution is an absolute number that the camera's image sensor can physically record.
- Interpolated Resolution adds pixels to the image using complex software algorithms to determine what colour they should be. It is important to note that interpolation doesn't add any new information to the image - it just makes it bigger!

**RGB.** (Red, Green and Blue). The primary colours from which all other colours are derived. The additive reproduction process mixes various amounts of red, green and blue to produce other colours. Combining one of these additive colours primary colours with another produces the additive secondary colours cyan, magenta and yellow. Combining all three produces white.



**Saturation** . The degree to which a colour is undiluted by white light. If a colour is 100 percent saturated, it contains no white light. If a colour has no saturation, it is a shade of grey.

**Scanner**. An optical device that converts images such as photographs, into digital form so that they can be stored and manipulated on your PC. Different methods of illumination transmit light through red, green and blue filters and digitize the image into a stream of pixels.

**Scene Modes**. Many digicams now have an exposure mode called *scene* where the user selects the best pre-programmed scene to suit the current shooting conditions. The camera will automatically change many settings to capture the best possible image. E.g. Sports, landscape, portrait etc.

**SD**. (Secure Digital). A flash memory card used in digicams and MP3 players. It is identical in size and shape to the MultiMedia Card (MMC). The difference being that SD cards were designed to hold protected (copyrighted) data like songs. Not all cameras that use SD cards can use MMC cards so be sure to read your owner manual before buying additional cards. **Secure Digital**. See “SD” above.

**Self Timer**. Preset time delay (e.g. 2, 5, 3, 5 or 10 seconds) before the shutter fires automatically. This allows the photographer be in the picture without using a long cable release or remote control. It is also great for taking macro or night shots as by not touching the camera, you eliminate the chances of camera shake. Is also good to use the “mirror lock up” function if you have it.

**Sepia**. The (brownish) mono toned effect seen in images from the original 19th and early 20th Century cameras. This is now a feature often found as a special image effect on some digicams and/or editing software.

**Shutter**. The physical device that opens and closes to let light from the scene strike the image sensor. Digicams use both electronic and mechanical shutters.

**Shutter Lag**. The time between pressing the shutter and actually capturing the image. This is due to the camera having to calculate the exposure, set the white balance and focus the lens. Is worse with smaller digicams whereas the better DSLR’s now have little or no shutter lag, like the better film SLR’s.

**Shutter Priority AE**. This is where the user chooses a shutter speed and the aperture is automatically determined by lighting conditions. Shutter speed priority is used to control motion capture. A fast shutter speed stops fast action, a slow shutter speed blurs a fast moving subject. It is good to use shutter priority for sports or wildlife photography.

**Skylight Filter**. This is an Ultra Violet absorbing filter that helps overcome the abundance of blue in outdoor photographs. Not really necessary in digital photography as the camera’s white balance system adjusts for the colour temperature of the scene. You can also use them to protect the camera’s lens from scratching, fingerprints or dirt.

**Slow Sync**. A flash mode in some digicams that opens the shutter for a longer than normal

period and fires the flash just before it closes. Is used for illuminating a foreground subject, but allowing a darker background to also be well exposed. Good for night time shots of buildings with people in the foreground.

**SLR.** (Single Lens Reflex). This means the camera has a viewfinder that sees through the lens (TTL) by way of a 45°-angled mirror that flips up when the shutter fires and allows the light to strike the image sensor (or film). Basically, what you see is what you get.

**SmartMedia.** (SSFDC). A flash memory card that consists of a thin piece of plastic with laminated memory on the surface and uses a gold contact strip to connect to the camera. SmartMedia cards are available in various sizes.

**Softbox.** A box with a diffuser panel that attaches to the front of a flash to give soft even light. Any visible highlights such as catch lights in eyes, reflections in silverware will be neat and square. Bigger ones give more surrounded and even light but absorb more light so are best used with powerful flash heads.

**Spot Metering.** The camera's auto exposure system is focused on a very small area in the centre of the viewfinder to adjust the overall exposure value just for that area.

**Stitching.** Combining a series of images to form a larger image or a panoramic photo. Requires special post editing software.

**Stock photography.** Photographs taken and submitted to a picture library. The library then sells the reproduction rights and takes a percentage of the fees. A good stock photographer regularly supplies images to the library and can earn a good income from picture sales throughout the year

**Stopping down.** Decreasing the size of the lens opening (aperture); for example, from f/8 to f/11. This increases the depth of field in a photograph, but a longer exposure is required.

**SuperCCD.** Fujifilm's image sensor used in their line of digital cameras.

**SVCD.** (Super Video Compact Disc). A CD-ROM disc that contains high quality video and audio. Normally, a SVCD can hold about 35-45 minutes (650MB) of video and stereo quality audio. The video and audio are stored in MPEG2 format, much like a DVD. SVCD video has better quality than VHS video.

**SVGA.** (Super VGA). This refers to an image resolution size of 800 x 600 pixels.

## T

**Telephoto** . This is the focal length that gives you the narrowest angle of coverage, good for bringing distant objects closer. (i.e. 100mm, 200mm, 500mm etc.).

**TFT.** (Thin Film Transistor). Refers to the type of hi-resolution, colour LCD screen used in digicams.

**Thumbnail.** A small, low resolution version of a larger image file, which is used for quick identification or speedy editing choices.

**TIFF.** (Tagged Image File Format). An uncompressed image file that is lossless and produces no artefacts as is common with other image formats such as JPEG.

**Time-Lapse.** Capturing a series of images at preset intervals. Also known as Interval Recording or Intervalometer.

**Tran reflective.** This is a type of LCD display that uses ambient light as well as a backlight to illuminate the pixels. It can be seen more easily in bright, outdoor conditions.

**True Colour.** Colour that has a depth of 24-bits per pixel and a total of 16.7 million colours.

**TTL.** (Through the Lens). Used when talking about either an auto focus or auto exposure system that works “through” the camera’s lens.

**Twain.** (Technology Without An Industry Name). Protocol for exchanging information between applications and devices such as scanners and digital cameras. TWAIN makes it possible for digital cameras and software to communicate with each other on PCs.

## U

**Under exposure .** A picture which appears too dark because insufficient light was delivered to the imaging system. Opposite of over exposure.

**Unsharp Masking (Unsharp Mask).** The process by which the apparent detail and sharpness of an image is increased. Generally accomplished by the input scanner or through computer manipulation using editing software.

**USB.** (Universal Serial Bus). This is the data I/O port on most digicams and is also found on modern home PC and Mac computers. It is faster than the serial port and transfers up to 12Mb/s (megabytes per second) with v1.1 interfaces.

**USB 2.0.** The newest USB standard which is close in throughput speed to FireWire, up to 400Mb/s.

**UV Filter.** This is an Ultra Violet absorbing filter that helps overcome the abundance of blue in outdoor photographs. Not really necessary in digital photography as the camera’s white balance system adjusts for the colour temperature of the scene. Can be used to protect the camera’s lens from scratching, fingerprints or dirt.

**UXGA.** Refers to an image resolution size of 1600 x 1200 pixels.

## V

**VCD** . (Video Compact Disc). A CD-ROM disc that contains video *and* audio. Typically a VCD can hold about 74 minutes (650MB) of video and stereo quality audio. The video and audio are stored in MPEG-1 format and follow certain standards (White Book). VCD video quality is roughly the same as VHS video.

**VGA**. Refers to an image resolution size of 640 x 480 pixels.

**Video Out**. This means that the digicam has the ability to output its images on television screens and computer monitors using either NTSC or PAL format.

**Viewfinder**. The eye level device you look through to compose the image.

**Vignetting**. The term that describes the darkening of the outer edges of the image area due to the use of a filter or add-on lens. Most noticeable when the zoom lens is in full wide-angle. It is also sometimes used as a special effect in the photo editing stage of development.

## W

**White Balance** . Refers to the adjustment of the brightness of the red, green and blue components, so that the brightest object in the image appears white. See also “AWB”

**Wide angle**. The focal length that gives you the widest angle of view. I.e. 10mm, 16mm, 24mm etc.

## X

**X3 Image Sensor** . Foveon’s new image sensor for digital cameras that captures red, green and blue data on every pixel.

**xD-Picture Card**. A new flash memory card standard that was co-developed by Fuji film and Olympus in mid 2002. Rumoured at the time, to be replacing SmartMedia which had stalled at 128MB. xD is scheduled to go as large as 8GB (at the time of writing), in a form the size of a postage stamp.

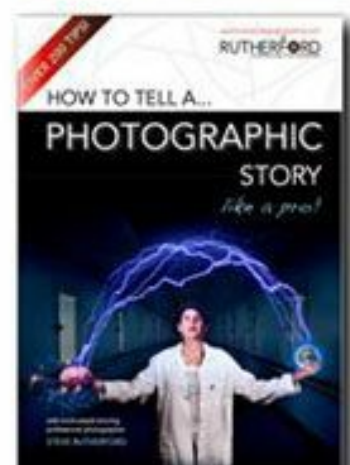
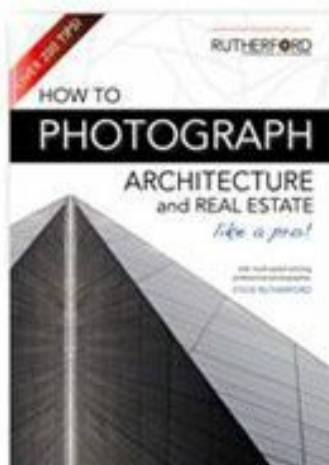
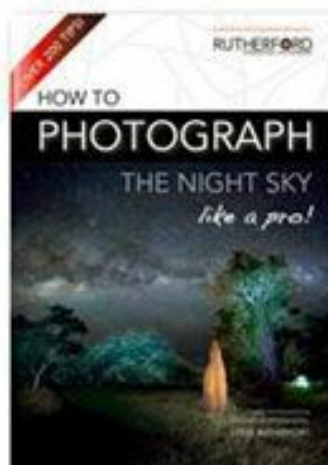
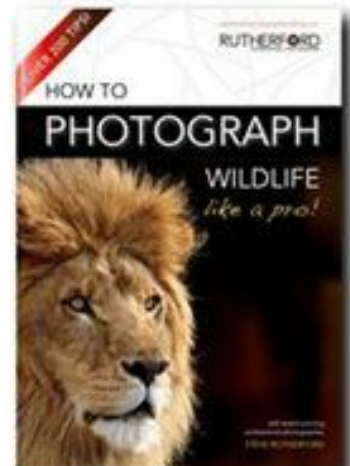
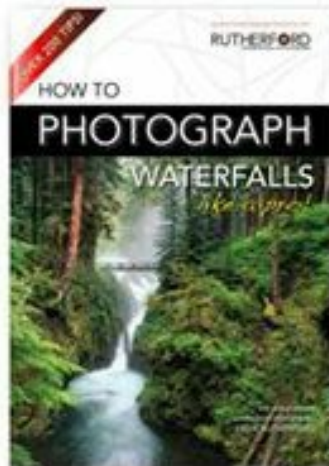
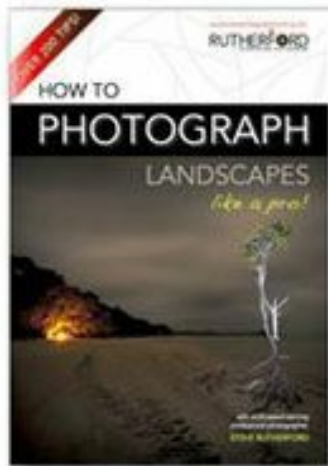
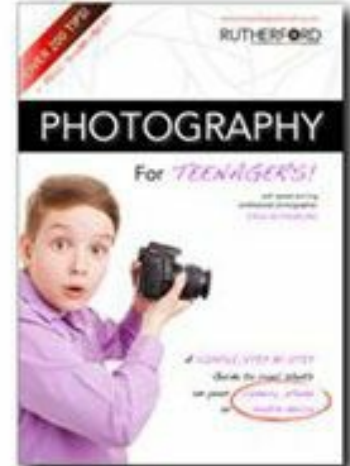
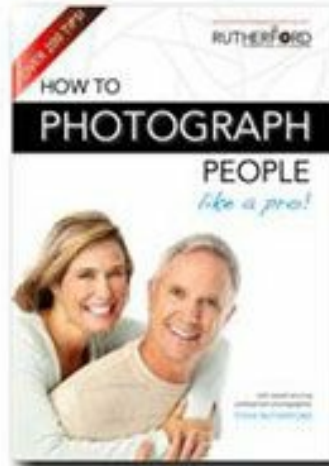
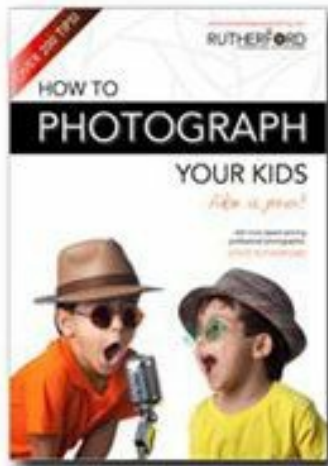
**XGA**. This refers to an image resolution size of 1024 x 768 pixels.

## Z

**Zoom Lens** . A variable focal length lens. The most common on digicams has a 3:1 ratio (i.e. 35-105mm). Detachable zoom lenses include for example, 24-70mm, 70-200mm and 100-400mm

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