

[Buying a new digital camera](#)

Purchasing a new digital camera can be a very overwhelming experience. Technology is continually changing and there seems to be upgraded cameras available every month! With these changes you can still ensure that you purchase the right camera for your needs by understanding the technology. You will not be able to understand all of it, however you can gain the knowledge to make the right decisions. This article will cover the features of digital cameras that are most important for you to understand.

First of all you need to understand the similarities of standard film and digital cameras. In short, a camera is a light airtight box that allows exposure of a light-sensitive material through the use of a shutter and an aperture. This definition does not change from film to digital cameras, nor does the process.

Lenses focus the image and control how the photo will look (wide or telephoto); both film and digital cameras have lenses. The lens is also one of the most important factors in determining overall photo quality; the better the lens quality, the sharper and more clear your image. In film or digital photography- poor lenses=poor image quality.

Shutters control the duration of the exposure in both types of cameras. Both film and digital cameras use an Aperture to control how much light hits the sensor during the time frame that the shutter is open. Very large apertures (2.8 or 4) will let in a lot of light, while small apertures (16 or 22) will let in very little light.

Focusing will always be a necessary step in creating sharp photographs regardless of whether you are using film or digital cameras. Manual and auto focusing can be found on both types of cameras. So what are the differences between the two? The main difference is the way in which the cameras record light. The traditional camera uses film while the digital camera has a sensor and a processor. Understanding the way the sensor and processor work is the key to knowing digital cameras.

So what are the differences? The main difference is the way in which it records light. The traditional camera has film and the digital camera has a sensor and a processor. Understanding the sensor and processor is the key to knowing digital cameras.

Film Advance, Lag and Response Time The digital sensor records light much like film. Once the light strikes film however, it is "exposed" and the camera must advance the film to the next frame to continue the process. With digital, the information that was captured during exposure is passed on to the processor and the sensor is freed up to record another image. The amount of time it takes for the sensor to "dump" its information and be ready to record again is called Advance Time. The digital camera's speed is also influenced by how many images it can store in the buffer before the camera needs a time out to process them. A typical statistic could be "23 full-res(resolution) JPEGs or 6 RAW images at 5 fps"(Canon 20D). This means the camera will shoot 5 frames per second until the buffer fills up. The buffer will become full at 6 exposures if you are shooting RAW and 23 if you are shooting the highest quality JPEG.

When digital cameras first became popular, something called Lag Time was a major issue. The "lag" in between the time you pressed the shutter and the time the shutter opened was very noticeable. Recent advances in technology have reduced lag time significantly. Even most low priced cameras, have a very quick turn around time in between shots or during a series of quick exposures. If your photography requires fast shooting and many frames per second, it would be a good idea to check out the frames per second and lag time statistics before purchasing.

ISO One of the many benefits of digital cameras is the ability to change ISOs at any time. ISO refers to the sensitivity of the sensor in a digital camera and film in traditional cameras. The higher the ISO the less light you need to strike the film. With traditional cameras, if you needed to get a faster shutter speed because of low light or fast action, you needed to change to a higher ISO film. This could be wasteful or inconvenient at best. With digital cameras you can change the ISO on the fly. Now it is possible to be photographing outside in bright sunlight with a low ISO (for better color and image quality) and then walk indoors, change the ISO and continue shooting.

This increased sensitivity does have its drawbacks however. With film you get an excess of grain, with digital you get what is called noise. The grain of film, in most cases is considered acceptable and in some cases even desired. Noise, however does not have the same allure. Unlike different emulsions of film, the sensor really only has one sensitivity. To manage an increased ISO, or during very long exposures, the camera must send more power to the sensor, which results in the appearance of small specks or dots of white or color. A blotchy look can also be created from the higher ISO's or long exposures. Most of the noise will generally manifest itself in the darker areas of your image. This is an important point to pay attention to if your photography requires higher ISO settings, nighttime or long exposures. In higher end cameras, manufacturers have spent the money to reduce the noise problem, but it still may present itself on the lower cost models. Look to reviews for how much noise individual cameras will produce.

In today's market almost all digital cameras have very high resolutions. You can even find less expensive cameras with resolutions sufficient enough to make a decent 8x10 or 11x14 prints. Given this you might be asking, "what is the big attraction to higher resolutions?" For the most part it is a selling point for the manufacturers! More resolution is good but what is even better, and what you want to look for in your camera, is a larger sensor size. Here the bigger the better manta comes into play. Sensor size is a much better measure of the camera's final image quality. In film cameras, a 35mm is better than an APS camera because the size of the image on the film is bigger. There is no difference with digital cameras.

These days almost all digital cameras have very high resolutions. Even the less expensive cameras all come with resolutions sufficient enough to make good 8x10-11x14 prints. So what is the big attraction to higher resolutions? Mostly, it is a selling point for the manufacturers! More resolution is good but what is even better, however, is a larger sensor size. The bigger the better. This is a much better measure of the camera's final image quality. In film cameras, a 35mm is better than an APS camera because the size of the image on the film is bigger. No different with digital cameras.

White Balance White balance refers to the processors ability to create "correct" color in your pictures. The digital camera sensor always captures "raw" information and then the camera processor processes it and sends it to the memory card.

White Balance White balance refers to the processors ability to create "correct" color in your pictures. The digital camera sensor always captures "raw" information and then the onboard processor processes it and sends it to the memory card.

So if your light is Then the color is Choose this White Balance for good color Daylight Neutral ("white") Daylight Late Afternoon/Sunset Warm (yellow/orange) Daylight Early Morning Warm (yellow/orange) Daylight Cloudy Cool (blue) Cloudy/Overcast Open Shade Very Cool (blue) Open shade Unknown Light source ??? Auto Tungsten/Incandescent Very yellow/orange Tungsten/Incandescent Fluorescent Green Fluorescent

So if your light is Then the color is Choose this White Balance for good color Daylight Neutral ("white") Daylight Late Afternoon/Sunset Warm (yellow/orange) Daylight Early Morning Warm (yellow/orange) Daylight Cloudy Cool (blue) Cloudy/Overcast Open Shade Very Cool (blue) Open shade Unknown Light source ??? Auto Tungsten/Incandescent Very yellow/orange Tungsten/Incandescent Fluorescent Green Fluorescent

Lenses Lenses play a major part in creating high image quality, along with the sensor and processor. Luckily in todays marketplace we are at a place in time where most lenses are of a very high quality. So we now know that speed and length are the qualities that you should look at. Speed refers to the fastest -stop of the lens. 2.8 is faster than 3.5, which is faster than 4. A faster lens allows you to shoot in lower light conditions without raising your ISO. It also allows you to achieve a shallow depth of field, which should result in a blurred back or foreground.

Buying a new digital camera

The next item you need to consider is focal length. Do you prefer to photograph with wide-angle lenses? Long telephoto lenses? Do you enjoy shooting up close with macro lenses? Film and digital cameras both come with all of the same lens options. It is simply a matter of choosing the camera with the qualities that you want. Doing some research through reading magazines or surfing on to the web and visiting sites such as dpreview.com will allow you to easily find the specifications that describe all of the options.

Two sets of specs are commonly given when you begin to look into focal length . The first set is generally the actual focal length of the lens. For example, 7mm-28mm. This example would be an extreme wide angle on a film camera. The digital camera however, has a smaller sensor area than the film camera which makes the 7mm lens look more like a 35mm lens. So the second set of numbers on this lens would be 35mm-136mm. This is typically considered the 35mm equivalent. It is these numbers you should pay attention to when researching different cameras for focal range as they will be more recognizable to you.

Most amateur digital cameras do not provide real wide angle lens choices. They will commonly go down to 35mm or even 28mm but rarely can you find a 24mm or wider. This is mainly due to the difficulties in building such a small focal length lenses. So if you enjoy wide angle photography you many want to think about moving up to a digital SLR.

When it comes to long telephoto lenses, however, the digital cameras have a big advantage! Their smaller sensor size turns even moderate telephotos into very long lenses. For example a real 57mm focal length behaves like a 370mm! This is a real boon to folks who like to shoot "long". Beware however of cameras which claim their longest focal length as Digital Zoom. Digital Zoom should always be avoided. We are concerned only with real or actual focal lengths.

Focusing distance is the last lens specification to consider. If you desire to shoot macro, please look for a lens that focuses very close. They will

usually be signified by a "macro mode" or be called "close focusing".

Shooting your digital camera in the field Taking photographs should be the fun part. It is important to not let all of the bells and whistles confuse you when you are out in the field. I agree that there are many choices and they can be a bit overwhelming. Here are three of the most important things you should always check before you start photographing.

ISO- Keep it set to a low (100 or 50) if you are outdoors or in areas where you have plenty of light. Raise it only when you need to keep from getting camera shake. Most digital cameras provide great images all the way up to 400 ISO. If you need to go higher than 400 ISO, you can run the risk of introducing a noticeable amount of noise to your photos. Play with your digital camera to figure out which ISO produces unacceptable noise levels.

Jpeg vs. Raw- This is an easy choice. Shoot RAW if you want to work on every image in your computer. The RAW format is very flexible and easily allows you to correct for errors in exposure and color cast without degrading your image quality. You will want to use the Jpeg mode if you do not have the time or desire to work on every image. Jpeg mode uses a minimum amount of image compression which provides extremely high quality pictures.

Image Size- Many cameras automatically come with multiple resolution choices. The options may look like this: 2304x1728, 1600x1200, 1280x960, 640x480. Basically, always choose the highest resolution. In this case that would be 2304x1728. This setting will supply you with the highest quality images possible.

Digital Camera Accessories To say that there are a lot of accessories for the digital camera would be an extreme understatement! It can boggle the mind with all of the different options, cases, cards and storage units. There are however, only a very few accessories that are absolute necessities.

Compact Flash-The first accessory is the type of storage medium that your camera uses to store your photographs. I prefer cameras that use Compact Flash as I have found this medium to be the best all around Flash Card. Compact Flash cards are sturdy, durable, not too small to lose or to big to be bulky. They also come in very large capacities-up to 8 gigabytes! Personally I recommend that people should have at least two cards in case one card becomes damaged or lost. How much you want to spend will determine your total amount of storage (cameras rarely ship with a card that is adequate for most photographic purposes). Having two 512Mb cards might be enough for most shooting situations, unless you take loads of photographs. Having 4 of these cards or two 1 GB cards will ensure that you will never be without storage.

Portable Storage-If you have invested in enough Flash Card storage, you will probably not need a portable storage unit. This is however contingent on downloading your cards on a daily basis. If you are in a situation where you will not have access to your computer for long periods of time (in order to upload your photos from your camera to your computer) you may want to consider a portable storage unit. The idea of a Portable Storage unit is to move your photos from your Flash Card to the storage unit thereby freeing up space on the card. You can then put the card back into your camera, reformat it, and continue taking pictures. When you return home you simply attach the storage unit to your computer and transfer the images to your computers harddrive. Most Portable Storage units come with enough space for many days of shooting. A recommendation would be to purchase a unit with at least 10Gb of storage.

Storage and transfer are the most basic function which all of the models will perform. From here they can get really fancy. There are units that will automatically burn Cds from your cards, which produces an immediate archive of your images. Others come with an Lcd screen that allows you to view your images right on the storage device. Advanced features will even enable you to organize your images into folders and albums. Think about the length of time you will be away from your computer before purchasing one of these storage units. You may not need one.

Extra Batteries / Charger Digital cameras go through batteries at an alarming rate. You will definitely need to have back up batteries. Given that you will go through so many batteries, rechargeable batteries are the intelligent choice. Most digital cameras come with a proprietary battery with a charger. This is helpful as it allows a stronger battery. If this is your situation, it is a good idea to purchase extra batteries when you buy your camera. If your camera is powered by common AA batteries, you would be wise to buy a couple sets of rechargeable batteries.

Bulb blower- a must if you are considering an interchangeable lens SLR. When you change lens on these cameras you will introduce dust into the body. Ultimately this will migrate to your sensor and manifest itself as small blurry splotches on your final image. A few seconds with the blower bulb will save you hours on the computer cleaning up your photographs!

About the Author

Thinking about digital photography, ever want to start [Learning Digital Photography?](#) Get Great Tips on how to shoot Digital Photo's with [This Free](#)

[Report](#)

Source: <http://www.onlineearnings.net>