

An Introduction to Digital Photography

The Basics +

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- ✓ Establish Your Needs
- ✓ Your Camera
- ✓ Basic Functions
- ✓ Features
- ✓ Taking the Picture
- ✓ Saving Pictures
- ✓ Power Supply & Batteries
- ✓ Lenses
- ✓ Care and Protection

✓ Establish Your Needs

- ❖ Pictures you intend to shoot.

First, you must decide what types of pictures you intend to shoot, landscape, portrait, family gatherings, or a mixture and the amount you are willing to spend. Once you know this you will have an idea of what features your camera should have. It is also helpful to know what you intend on doing with the pictures once you have taken them. Are you going to be emailing them to friends, just printing them, or publishing them, or maybe uploading them to a website, etc.

- ❖ Get a feel for the camera that's right for you.

When you are browsing prospective cameras, hold them in your hands, feel the grip, make sure the camera feels comfortable in your hand. Make sure the controls are easily accessible. Check with friends and family, and see what they like or don't like about the camera they have. You may want to purchase a low end digital point and shoot to get familiar with the digital

process or you may want to invest in a camera that will grow with you and enable you to add lenses, etc.

❖ Computers – Downloading.

You will need a computer to download your pictures to. Your manual will explain how your camera works for downloading. Usually you plug the USB plug into your camera and the computer and the pictures automatically open the program for downloading. You may have to load some software first when you initially set up your camera. This will allow you to download, save, print, and email your photos to friends and family.

✓ **Your Camera**

✓ Read your Manual.

If you read your manual, and make sure you have it with you when you go on shooting adventures, you will be able to utilize all the features on your camera and get the most out of your camera. It is frustrating to know that your camera can do this or that, but forget how to adjust your camera to the right settings.

❖ Anatomy of your Digital Camera

All digital cameras are basically the same. They consist of the following:

1. Shutter release – electrical as opposed to mechanical
2. Viewfinder – some cameras only have an LCD screen
3. Power Input Socket – some cameras allow you to plug into main to save batteries
4. Microphone – voice memos, or sound can be added to video. Not all cameras have this feature.
5. Battery – main power source of cameras

6. Lens – the eye of the camera, quality of lens makes big difference in finished product
7. Power Switch – turns the camera on and off.
8. Self-Timer Lamp – visual countdown to let you know when the shutter will be clicked.
9. Flash – produces extra light when needed. Can be manually fired on some cameras.
10. Memory – Images stored on the memory card, acts like the film for your camera
11. Mode Switch – allows for selection of different automatic settings
12. Zoom Control – allows you to get closer to your subjects without moving
13. Macro Mode – allows you to take close up shots at any angle
14. Flash Mode – allows the user to dictate the intensity of the flash, user can also stop the flash from firing
15. LCD Monitor – Liquid Crystal Display, similar to a small television screen. Allows for easy set up of a scene, but is a massive drain on battery power
16. Menu/ok Button – when changing settings on your camera, this button is pressed to save settings
17. USB socket/AV output socket – connection for usb cable when linking camera to other machines, such as computer, or printers, etc. Can also be used to hook your camera to your dvd player to view images on your television set.

✓ Zoom – Optical or Digital?

Optical uses the lens to enlarge the subject, but digital uses software in the camera to enlarge the subject. Digital zoom can affect colour and sharpness, so try not to use this method.

✓ LCD Display

The LCD panel allows the user to see the scene before the picture is taken. It also allows the user to set up the camera with the menu. On a point and

shoot digital camera, it does not always give a true picture of what the actual picture will look like, as do SLR digital cameras. Very high drain on the battery, and very hard to see in bright light. Some cameras allow for the LCD panel to swivel for different angle access.

✓ **Features**

- ❖ **Auto** – the camera does all the work.
- ❖ **Landscape** – These shots usually require a sharp foreground, middle ground and background, since it is a wide expansive scene is needed, and is not restricted to landscapes only. This mode helps with the technicality of photography.
- ❖ **Portrait** – creates a shallow depth of field to allow the subject to be sharp, while the background is thrown out of focus, so that the focus is on the subject.
- ❖ **Action or Sports** – the camera sets a faster shutter speed to freeze any action, enabling a sharp image while the subject is moving.
- ❖ **Flash** – built in flash takes a light meter reading and decides whether or not a flash is needed.
- ❖ **Night Portrait or Slow Synch Flash** – in this mode, the camera will opt for a longer exposure to gain all available light. Usually, the flash will be automatically triggered. Use a tripod in low light conditions, because any shake of the camera in this mode will cause blurred pictures.
- ❖ **Close up or Macro** - Usually used for nature and still life photography. Can be used for other things, but when set to macro mode, the user can get as close as an inch from the subject.

✓ Taking the Picture

- ❖ Keep your camera steady. Use a tripod. Also keep your elbows to your sides when you are taking pictures and hold your breath. Just like having an x-ray, the stiller you are, the better picture you will have.
- ❖ Keep your horizon straight.
- ❖ Histograms
- ❖ Rule of thirds – See example picture.
- ❖ Try different settings for a different effect.
- ❖ Less is more – look at your picture 3 times. Check for point of interest, background, and foreground. Make sure there are no distractions in the picture to take away from what you are shooting.
- ❖ Gently press the button and take the picture

Note: ISO (“International Standards Organization”) is also important when taking a picture. It represents the digital sensitivity to light in your camera. When using film cameras, you had to wait until you finished a role of film before being able to change your ISO, now with digital you can change it whenever you want. An example of ISO settings and the results is set out in this chart below:

Low ISO 50 – 400	High 400-1600	Ultra High 1600 & above
Lowest Noise	Low to moderate noise	High to extreme noise
Saturated colour	Saturated colour	Desaturated colour
Accurate colour	Accurate colour	Colour shifts frequent
Best tonal range	Good tonal range	Blocked noisy shadows &

		blown highlights
Lowest contrast	Low contrast	High contrast
Slowest shutter speed	Medium shutter speed	Ultra high shutter speed

✓ Saving the Picture

❖ Memory Cards – See example chart.

There are different types of memory cards, Smartmedia, Compact Flash, XD, and SD, etc. Each camera has its own, or uses more than one type. Here is a sample of what some memory cards are capable of saving in the different formats.

Image Type	Memory Card Capacity			
	128 mb	256 mb	512 mb	1 gb
4 mp; jpeg	64	128	256	500
4 mp; raw	24	50	102	200
8 mp; jpeg	36	73	146	286
8 mp; raw	14	28	57	111

❖ File Format

When you talk about format, the difference between film and digital chips, film had what was known as a photochemical reaction to light, meaning that light striking the film physically altered the structure of certain of the chemical compounds, allowing the photographer to capture and save an image on film using a chemical process.

On the other hand, the silicon chip has a photoelectric reaction. Light striking the silicon sensor cause changes in an electric current or electric property inside the chip. This allows the silicon chip to “map” the light that falls on it and is ultimately interpreted by your camera software, stored on

your memory card and then later your computer assembles the map and an image of the original scene is created.

(Remember to always save your files to allow yourself to work with them later.)

The different formats available are:

(But each camera is different, your camera may not have a particular mode available like TIFF or RAW.)

1. JPEG – (Joint Photographic Experts Group) Most commonly used. Each time you open the picture though to make changes, etc. you lose a little of the original image. If you are just using it for taking pictures to email to your friends and family, perfect.
2. TIFF – If you want to retain the quality of the image, you should save it in a Tagged-Image File Format (TIFF). This system compresses the image, but retains the quality.
3. RAW – This format saves every bit of data in its raw and uncompressed state. If you are working with your images, using computer software, this is the best format.
4. GIF – This stands for Graphic Interchange Format. This is a compressed file especially useful for internet images. It is easy for other computer programs to identify.
5. PNG – Portable Network Graphic is a replacement to the older GIF. It is compatible with both MacIntosh and Window systems.

❖ Storage of Pictures

As soon as you get home, transfer your pictures to your computer and burn them onto a disk before doing anything with them. That way if your computer crashes, your card is lost, etc., you haven't lost your pictures with

them. Try to set up a well organized filing and naming system. Never erase a memory card until you have burned a CD/DVD with your pictures. You can also have external hard drives to store your pictures on, and there are various other devices for storage in the market place.

✓ **Power Supply & Batteries**

Digital cameras rely on battery power most of the time. The best way to save money with respect to battery power is to buy rechargeable batteries and a charger. There are chargers available that will plug into your car lighter socket. So, instead of spending a fortune on batteries, rechargeable is the way to go. You should always use nickel-metal hydride (NiMH) batteries instead of nickel-cadmium variety. Because of all of the automatic features, like the LCD screen and power off feature, etc., the batteries are replaced often.

There is a USB cable supplied with your camera to download your images. You should consider investing in a card reader, very inexpensive, to download your images. This will save on battery power as well.

✓ **Accessories**

You might like to have a couple of accessories to go with your camera. Once you get used to using it, you will want to invest in a tripod. You may have to purchase the ac adapter plug. Oftentimes, it is not included with the camera. Other accessories available are:

Lenses

Flash Units (camera needs a hot shoe)

Filters (polarizing, neutral density, etc.)

Battery packs (grips)

Cable Release (wireless now available)

Different styles of straps to make camera carrying less cumbersome.

Depending on the camera you purchase, your manual or a search on the internet will tell what accessories you will be able to use.

✓ **Care and Protection**

A camera bag with padding and plenty of room for lenses, batteries, cleaning clothes, etc., and protection from heat and cold, dampness, etc. is essential. You can get cases that attach to your belt for hands free when on the move, or aluminum or steel cases that have foam inserts when traveling.

You can have your camera and lenses professionally cleaned for a small fee. You should clean the body and the lenses often to stop the buildup of dust and particles on your gear.

Make sure you use your gear, because if it is hidden away in your camera bag for long periods of time, you eventually will get mold in your lenses, so keep an eye out for this when cleaning lenses. Once it gets in there, it is really hard to get out. So get out there and take some pictures!

Happy Shooting!