

Using Your Own Digital Camera

A generic guide to working with digital cameras



Digicam Websites

- www.atsolutions.info/classfiles.asp - links to all of the following sites
- www.picasa.com (photo organizer and minor editing – free download)
- www.kodak.com – how to take better pictures, great site to learn about printing
- www.nikoncoolpix101.com – learn about megapixels, optical vs. digital zoom, etc.
- www.dpreview.com – digital camera reviews

Power Button

- Some power buttons are a two-step process where you have to push the button and then slide it to the side. Other cameras don't have an On/Off button at all, but need you to slide the lens cover to the side.
- Most cameras will go to sleep after a minute of inactivity and turn off completely after 3 – 5 minutes of inactivity. Press the power button again to wake the camera up or turn it back on.
- A flashing light next to your power button usually means that your camera is asleep

Shutter Button

- Press the shutter button half way down before taking your picture. This allows the camera to focus on the object(s) in the center of your viewfinder or closest to the lens.
- Be careful not to focus the camera in-between your subjects (i.e. when two people are standing together). Instead, focus on one subject by centering it in your viewfinder and pressing the shutter button halfway, then move your camera and get both subjects in the viewfinder while still holding the button half way, and finally press the shutter button all the way down.
- Look for a green light that goes solid when your picture is in focus

To Flash or Not to Flash

Most digital cameras have an Auto Flash setting that handles the flash for you. If you need light the flash goes off and if you don't need light it doesn't go off. On most cameras there is a red light that tells you about the status of your flash. Here are the probable meanings of that red light:

Red light on	Camera will flash when you take your picture
Red light flashing	Camera is charging the flash, wait until it is done before taking your next picture
No red light at all	No flash necessary

Non-Auto Settings for Your Flash

When the auto-settings for your flash aren't enough, you will need to handle the settings your self. Most cameras have a button that looks like a lightning bolt to customize your flash settings.



Always on



Always off



Red Eye on

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Notes About Your Flash

- Sometimes it is better to turn your flash ON while you are in bright daylight. This will help if your subject is in shadow due to the angle of the sun or to objects that may be blocking light. This is called Fill Flash.
- Check your manual to see what your flash range is. Don't take pictures at night when your subject(s) are out of your flashes range.
- The flash on a digital camera takes up a LOT of battery power. If you are trying to conserve battery power try turning off your flash.

Playing Your Pictures

You should try to recognize the difference between "picture taking mode" and when you are in "play mode". When you are in picture taking mode you are able to take pictures and the LCD image will show you what the lens is seeing (it will move around when you move the camera). When you are in play mode you will not be able to take pictures and you will only be able to see the pictures that you have taken previously.


Play mode is generally turned on by pressing the Play button or changing to the Play mode on your Mode Dial. Play mode usually looks like this:



While playing your pictures you can:

- Use your Zoom to look closer at your pictures
- Zoom out to see multiple pictures at once (helps to scroll through many pictures quickly)
- Delete your pictures – Use a button that looks like a trash can or use the Menu button
- The Menu button allows you play a slideshow, delete all of your pictures, and more

The LCD Monitor

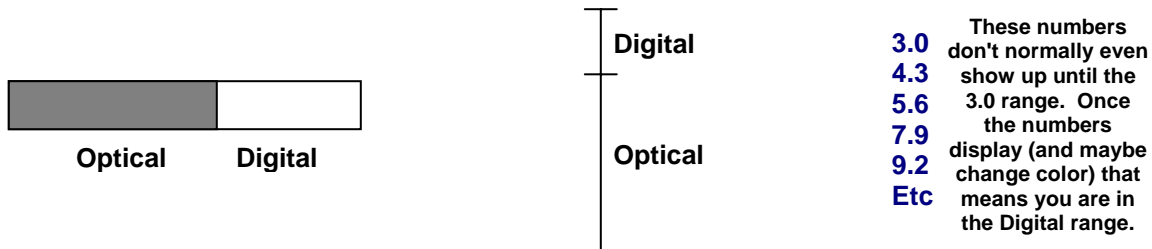
- The LCD is possibly the biggest drain on your cameras batteries. If you are trying to conserve battery power, consider turning off the LCD and using the Viewfinder instead.
- To turn off the LCD some cameras have you go to the Setup mode/menu while other cameras have a button that says **Disp**, **Display**, or looks like this: 
- The LCD generally shows you how many pictures you have left while in picture taking mode and how many pictures you have already taken in play mode. This number usually displays in the upper right hand corner or the lower right hand corner of the display.
- Fingerprints on your LCD? Take a piece of scotch tape and lightly press it against the monitor. When you pull the tape off it will take the fingerprints with it!

Optical vs. Digital Zoom

Most digital cameras have 2 different types of zoom: Optical and Digital. Optical zoom uses the lens of your camera to get a closer view of your subject. Your quality should still be excellent when using Optical zoom. Digital zoom uses the processor in your camera to crop the center of your picture and then increase the size of the pixels in that area. This causes a slight drop in the quality of your image very similar to when you use the Enlarge feature on a photocopier.

Some cameras do not have an *Optical* zoom at all. Normally these are cameras where the lens is built into the body of the camera and doesn't extend outside of the body. Other cameras come with the *Digital* zoom turned off because the manufacturer knows that it can cause a loss in quality. This isn't such a bad thing because once you take the picture and transfer it to your computer you can then use your computer to zoom in on the picture (in essence you will get the same results as using the Digital zoom on your camera). You should feel free to use the Digital zoom when you only plan on printing your pictures 4x6 or when you are only going to be using them on your computer.

How Optical vs. Digital Zoom is Displayed on the LCD



Batteries

It used to be that with film cameras we used to have to take roll after roll of film with us when we would go on vacation. Now that memory cards have replaced film, we no longer have to worry about this problem - we just have to get bigger memory cards. However, now our pockets are being filled with batteries instead of rolls of film. It's just a fact that digital cameras EAT batteries.

Rule #1 of Digital Photography: Always take extra batteries with you!

Read your manual to determine what type of batteries work in your camera. Once you know this you should go out and buy an extra battery (or batteries) and preferably they will be rechargeable.

One last note about batteries: Some cameras require that when you change battery types (i.e. you change from alkalines to Ni-MH) you also need to change a battery setting on your camera, normally found in Setup mode. The battery section of your manual is worth reading just to find out if this applies to you. If your camera is setup to receive one type of battery and you are using a different type of battery your battery life will be GREATLY reduced.

What kind of batteries should I buy? (taken from <http://dpfwiv.com/batteries.htm>)

Alkaline	CR-V3	NiMH Rechargeable	Lithium Rechargeable
Cheap	Same cost as 4 Alkalines	Low cost	Little more expensive
Found anywhere	2x Charge of AA's	High capacity	Good in cold weather
Very quickly drained	Fewer battery changes	Long life (500 – 1000 charges)	Very low self discharge rate
		Self discharges faster than others	
Just say NO to Alkalines. Only use as a backup.	To expensive to be worth it.	Very good choice	Very good choice

Rechargeable battery tip: Use a pen to write the number 1 on your first set of batteries, and then write a number 2 on your second set of batteries. In the future you should always charge the #1 set together and deplete them together and do the same with your 2nd set of batteries. With this in mind you should quickly be able to tell exactly which batteries are dead and which are charged and you won't interchange the two.

Resolution (megapixels)

The resolution of your pictures determines how large your can print. A smaller resolution setting will work well for printing 3x5's or 4x6's and for viewing on a computer or TV. Higher resolutions allow you to make larger prints but take up more space on your memory card. If you take a picture at a large resolution you can always print it at a small size but the opposite is NOT true. You can NOT take a small resolution picture and hope to print it large. Resolution is often stated as either Megapixels or Image Size. The more megapixels your camera has, the higher resolution images your camera can take.

Here is a table that shows how big an image will be on your computer screen and how large of a print size you can get from that image.

# of Megapixels	Print Size (inches)	Screen Image (pixels)
1.0 Megapixels	4 x 6	1280 x 960
2.0 Megapixels	5 x 7	1600 x 1200
3.0 Megapixels	8 x 10	2048 x 1536
4.0 Megapixels	11 x 14	2272 x 1704
5.0 Megapixels	16 x 20	Does it matter?

Here's an example of how a **2.0 megapixel** picture may show up on a 14" and a 17" computer screen:

While this picture is much too big to fit on most monitors...



...it would make for a perfect 5 x 7 inch print.

Note: Many newer computers know not to display pictures in this manner. They will automatically zoom out on your picture and display it at a fraction of its actual size.

Resolution can be set a number of different ways depending on your camera:

- Press the **Menu button** and look for **Resolution** or **Image Size**
- Press the **Function button** and look for **Resolution** or **Image Size**
- Go into the **Setup mode/menu** and look for **Resolution** or **Image Size**
- Some have a button that looks like this:



Quality (a.k.a. Compression Rates)

When digital cameras take pictures almost all of them compress the images before storing them on your memory card. This reduces the pictures clarity by a very small percentage but saves a very large percentage of the memory requirements for that image. Along with Resolution, many cameras also have a Quality setting that you can change. The better the quality, the better the print will be and the more memory that image will take up on your memory card. Remember, Resolution determines how large you will be able to print your image while Quality determines how nice that picture will be. Here are some examples of the Quality settings from different cameras:

- Normal, Fine and Super Fine
- Good, Better and Best
- 3M Normal and 3M High
- And some cameras combine Resolution and Quality and don't distinguish between the two

Memory

Memory is directly related to Resolution and Quality. Pictures taken at a high Resolution and at a high Quality will take up more memory than pictures taken at a low Resolution and low Quality. Larger pictures take up more space on your memory card, take longer to transfer from the card to your computer and also take longer to email (uploading and downloading will take longer).

So how much memory do you need? Think about how many rolls of film you normally take with you when you are going to take pictures. Do you normally take 3 rolls of film (approximately 72 pictures) or do you take 12 rolls of film (approximately 288 pictures)? You need to decide how many pictures you want to take and then decide what resolution your camera will take them at. Many people take their pictures at the best possible settings, that way if they get the shot of a lifetime they will be able to blow it up to its largest print size. After you've decided how many pictures you want to take, look at the table below to decide what sized memory card you need to buy. Remember, it's always better to have more memory than you need than to run out of memory when you need it.

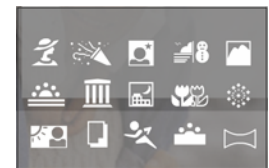
Megapixels	16 MB	128 MB	256 MB	512 MB	1 GB (1024 MB's)
1 MP	20 – 44	160 – 250	320 – 550	450 – 900	Lots and lots
2 MP	16 – 32	128 – 220	256 – 480	512 – 770	Too many
3 MP	10 – 20	80 – 150	160 – 300	320 – 550	A bunch
4 MP	6 – 16	42 – 128	96 – 256	170 – 384	340 – 768
5 MP	3 – 12	38 – 92	76 - 180	112 – 292	224 – 584

Important! Read your manual or the box that your camera came in to determine what type of memory your camera uses. Some different types of memory are: Compact Flash, Secure Digital (SD), Memory Sticks, XD, mini-CD's, and more.

Camera Modes and Scenes

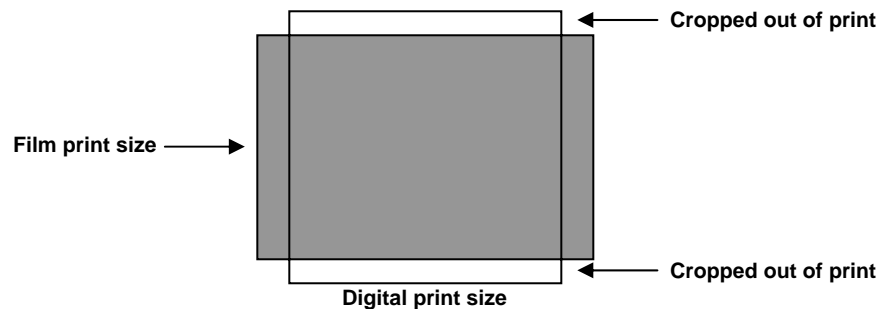
Not all cameras have the following modes and/or scenes. The difference between a mode and scene is fairly arbitrary and may differ from camera to camera.

- **Portrait mode:** Foreground in focus, background blurred, Red Eye flash if needed
- **Landscape mode:** Focus on infinity, flash turned off, try to stay steady when taking picture
- **Sports mode:** Good for action shots and pictures of kids or pets (who won't stay still)
- **Panorama mode:** Stitch multiple pictures together to make one large photo
- **Macro mode:** Looks like a tulip on your camera, used for extreme close ups such as flowers, insects, coins, jewelry, etc.
- **Video mode:** Press the shutter button to start the video, press again to stop the video. Length of video directly related to size of memory card.
- **Museum scene:** Turns off flash, try to stay steady when taking picture
- **Beach/Snow scene:** Use in bright settings so pictures are not over exposed
- **Sunset scene:** Brings out the rich color in sunset pictures, flash turned off
- **Fireworks scene:** Turns off flash, probably need a tripod to avoid blur



Printing

- Printing at home can be very expensive! Most printers need a new ink cartridge after about 10 full color prints and ink costs money. Good paper can also be costly.
- Professional printers (Costco, Sam's Club, Target, Walmart, etc) use professional ink that will last much longer than most consumer ink.
- Many of your prints will have the top and bottom of the pictures cut off. This is because digital cameras take pictures that are relatively square rather than rectangular (like film cameras). This problem can be fixed on your computer through cropping or can be fixed while transferring pictures to your professional printer through their kiosk.
- Some cameras can also fix this problem before you even take the picture. Look for a 3:2 ratio setting when you change the resolution on your camera (see notes on Resolution earlier in this handout).



What kind of paper should I print on?

- Always use photo quality paper (ink will bleed on plain paper)

Glossy Paper	Matte Paper
Shows colors better	Color not so vibrant – softens pictures
Shows more fingerprints	Won't stick to plastic (when inserted into a photo album)
Odd reflections in certain light	Not as much glare when framed under glass
2x the cost of Matte paper	Half the cost of Glossy paper
Feels more like a picture	

Accessories

- **Card Readers** → Take about ¼ of the time to transfer images to your computer, don't use battery life in the process, always connected to your computer, not as intimidating to your spouse who is scared to use the computer...
- **Memory Cards** → Always better to have too much than too little, make sure you buy memory that works with your camera, some can "lock" so you don't lose valuable images

Note! There is no need to worry about your memory card going through X-ray machines. Your card will not be affected by the X-rays. Your camera should be fine as well.

- **Microfiber Cloth** → Use to clean your LCD screen (try not to use your shirt or the LCD may scratch)
- **Carrying Case** → Can be small and simple or large and professional. You at least need space for extra batteries and a cleaning cloth. You might need space for extra memory cards.
- **External Hard Drive** → Digital pictures take up a lot of space on your computer. Professionals usually have an external hard drive for backing up their pictures.

- **iPods and Other MP3 Players** → These can often be used to temporarily store your pictures while on vacation (they act like a portable hard drive). Requires an adapter to transfer your pictures from your memory card.

Software

Organize your images and make minor edits:

- **Picasa** (www.picasa.com) → Free to download; easy to use; helps you print, email, create slideshows, backup, make minor edits to pictures (but you can't add text), and add your images to a website or blog. Red Eye feature isn't very good. Windows users only.
- **iPhoto** → Easy to use; integrates with iTunes, iMovie, and iDVD; create slideshows, create iBooks, make minor edits to pictures (but you can't add text). Mac users only.
- **Adobe Photo Album** → Same ability to organize your pictures as Picasa or iPhoto but gives you much better tools for creating holiday cards, calendars, etc. Windows or Mac. Costs about \$50.

Make major edits to your pictures:

- **Adobe Photoshop** → This is the software professionals' use. It is expensive and has a huge learning curve. Rookies beware.
- **Adobe Photoshop Elements** → A watered down version of Adobe Photoshop. Under \$100 and designed for the amateur photographer to tweak their images.

Taking Better Pictures

Taken from Kodak.com

Look your subject in the eye

- Stoop down to children's eye level

Use flash outdoors

- Bright sunlight can create odd facial shadows
- Use your camera as a "fill flash" to fill in some of the shadows
- Not sure? Take the picture twice - one with the flash and one without.



Move in close

- If your object is smaller than a car, take a step closer and zoom in on your subject
- Your goal is to fill the picture area with the subject you are photographing

Move it from the middle

- Avoid placing all of your subjects in the middle of your picture
- Nikon Coolpix – turn on the Framing Grid (Setup mode | Monitor settings)
 - Try to place your subject in one of the intersections of the grid lines
- Will need to use Focus Lock to make this work

Lock the focus

- Center the subject in your view finder, then press the Shutter button half way down
- Now move your camera so the subject is off to the side (keep holding the button half way)
- Press the button all the way down

Know your flash's range

- Do NOT take pictures outside of your flash range (11' on the Coolpix 3200)