

Digital Cameras & Imaging

Digital cameras use electronic light sensors (CCDs) instead of film on which to record photos. These images are stored as data files on the memory within the camera or on memory cards inserted into the camera. The image files can then be downloaded to a computer, edited, placed on Web sites, or printed.

COMPARING CAMERAS

Ask: Is the end use of the images for Web or print? Is the camera to be used occasionally or continually? Does the planned usage justify the cost? Compare the following elements you're considering.

MEGAPIXELS

Digital images are composed of elements called pixels (picture elements); the more pixels, the sharper the image resolution.

Sample good quality (150dpi) sizes are:

- 3MP 2048x1536 pixels 8x10" print
- 4MP 2272x1704 pixels 11x14" print
- 6MP 3008x2000 pixels 16x20" print

ZOOM

- Optical zoom: magnifies the image through lenses that change the focal length, just like a film camera.
- Digital zoom: crops the center of the image and enlarges it, often reducing the clarity of the image.

MEMORY

- In-camera storage, if any, is usually limited.
- Removable memory cards are recommended, like Compact Flash, SD (Secure Digital), and Sony Memory Stick. 512MB of storage will likely be plenty of storage for the average user.

VIEWFINDERS

- Optical: the normal camera viewfinder.
- LCD: 1-3" fl at screen that may be movable.
(Most digital cameras have both viewfinders.)

BATTERIES

Rechargeable batteries are recommended. With full charge, will give 2-6 hours continuous usage.

- Non-rechargeable alkaline: short life (.5 hr), but easy to get anywhere.
- Lithium Ion: most powerful and long-lasting, but also most expensive.
- NiMH: powerful, lasts through hundreds of recharges; recharge 1x/month during periods of non-use. (NiCd not recommended.)

STORING IMAGES

FILE FORMATS

- JPEG(.jpg) is the most common file format for digital photographs and is the best option to choose most of the time in the camera settings. It is a "lossy" format which means it compresses images by discarding "unnecessary" information.
- TIFF (.tif) and PSD (Photoshop document) are "nonlossy" formats which are best for archiving photo images after they have been edited.

SIZES

- Compressed image files generally use between 300KB and 2.5MB per image.
- If you might not know all the uses for your photograph, keep the image large for your archive file.
- For WebCT, save as a JPG in the size needed.
- For full-screen PowerPoint, save in JPG format, sized at ~7.5x10".
- Images saved in JPEG format will have the smallest file sizes, but will suffer some degradation from compression. For most users, this will not be noticed.

STORAGE

- Save and store important photos on CDs. Make a backup copy of the CD.
- CD-R is better, option for multi-session, 100-year life. CD-RW is slower, cost is higher, 30-year life.
- Include a thumbnail sheet for later retrieval/selection.

SHOOTING TIPS

- Use P mode (*for program*); choose flash mode; camera chooses f-stop and shutter speed.
- Try turning off the flash!
- Use Night Scene mode when shooting at night with the flash.
- Be aware that there can be a noticeable delay between pushing the shutter release button and the actual click of the shutter. This is not a problem with digital SLRs.
- Use auto white balance setting. Digital cameras define a "whitepoint" to base percentages for other colors.
- Camera "shake" is more noticeable in digital photography. Use a tripod or lean on a solid object to lessen shake when shooting in low-light situations. To combat camera shake, cameras with wide zoom range (6x or more) often employ digital image stabilization.
- Choose simple, uncluttered backgrounds.
- Move closer to your subject (within an arm's length).
- Include people in "landscape" photographs.
- Try to capture "un-posed" action.
- Carry an extra set of charged batteries.

Note: Using your own photographs does not require copyright permission(s), providing you don't photograph works that others have produced.

Reference: Sam Parsons, Digital Imaging Specialist and Sacramento State Campus Photographer, parsonssg@csus.edu