

Taking the Mystery Out of Digital Photography

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- What To Look For (and Avoid) in a Camera
- Demystifying Megapixels
- Photo Editing Software
- Printing Your Pictures

Digital vs. Film

ADVANTAGES

- Instant Gratification
- Instant Retake Oppty.
- Ability to Email
- Use on a web site
- More Permanent
- EZ Duplication (CD)
- No Film & Developing

DISADVANTAGES

- Initial Cost
- Knowledge
- Equipment

What can I do with digital photos?

- Personal or business web site
- Ebay
- Insurance purposes (jewelry, antiques)
- Email to friends and families
- Print at home or at a store
- Make screen savers, wallpaper
- Word documents, presentations

1. How does a picture “become” digital?

- By using a Digital Camera
- Scanning a standard photograph

2. Do I need a computer? If yes, what kind?

- No. Camera alone can archive personal belongings.
- Memory alone can go straight to printer.
- Yes, to edit and email photos.
- Any PC/Mac bought w/in past 3-4 years allows you to edit, print & email photos, and upload them to a web site.

3. What's "resolution"?

- The degree of sharpness of an image displayed on a computer screen.
- Example: Old newspaper photos

4. How does resolution affect quality?

- Resolution = quality.
- The higher the resolution, the higher the perceived image quality.
- High resolution means more pixels.

5. So what's a "pixel"? And what's a "megapixel"?

- Pixel= picture (pix) elements (els)
- Megapixel aka MP = a million pixels
- A pixel is a dot. Remember the newspaper photos? The more dots, the better the quality.
- More MP = more quality = more \$\$\$

6. How many Megapixels do I need?

- You tell me:

Usage	Dimensions	Size in MP
Web Site	450 X 350 pixels	.25 to .50 MP
PC Wallpaper	800 X 600 pixels	.50 to 1.5 MP
4 X 6 prints	1200 X 1800 pixels	1.5 to 2.5 MP
8 X 10 prints	2000 X 2500 pixels	4 to 5 MP
12 X 16 prints	2400 X 3200 pixels	6+ MP

7. What's DPI?

- Means “dots per inch”
- Printer's equivalent to pixels
- More on printers later

8. How does resolution affect file size?

- Higher resolution = bigger files
- Compression makes hi-res pictures smaller and more manageable.

9. What's compression?

- Compression is a method of data storage where files are made significantly smaller using a complicated mathematical algorithm.
- Example: human perception

10. What are drivers?

- Drivers are files that allow one device to communicate with another.
- Your camera may require you to install drivers so your PC can recognize it.

11. What's a memory card reader? And what's USB?

- USB stands for Universal Serial Bus.
- It's a slot in the front/back of newer PCs used to physically connect scanners, cameras, memory card readers and printers.
- A memory card reader treats any kind of memory card like a disk drive → EZ erase, copy and manage files.

12. Where do the pictures go after I take them?

- They become named files (usually numerically) and they reside on your camera's memory card – more on memory cards later.

13. How many pictures can a digital camera take?

- Theoretically, an unlimited number.
- In reality, as many as you have memory cards and batteries you have.

14. Can I erase pictures I don't like?

- Yes! But try to wait until you look at them on your PC.
- You will use a lot of battery juice deleting files on your camera.

15. Speaking of batteries, what happens to my pictures if the battery dies?

- Batteries are good for several hours.
- All cameras have power save mode.
- Pictures are safe on memory card.
- Last photo as battery died may/not be saved.
- Buy a spare battery if affordable.
- Nikon Coolpix = AA batteries, easy to replace.
- Rechargeable batteries cost more, but save \$\$

16. How can I archive existing pictures, like old family photos?

- Use a scanner
- Professionally, at a photo shop

17. Where should I keep my pictures after I look at them?

- For long term SAFE storage, upload them to the internet (Yahoo briefcase, 10MB, free)
- Burn onto CD, keep safe.
- Your hard drive is NOT a safe place.

18. Do digital pictures last forever?

- Yes, as long as the media (CD hard drive, memory card) is intact, and...
- If you have a device on which to view them (PC or camera)

19A. Photo Example #1

What a “macro” lens can do:



19B. Photo Example #2



20. What's all this alphabet soup of file names?

- JPEG à “jay-peg”
- GIF à “jif” (like “jiffy”)
- BMP à “bitmap”
- TIFF à “tiff”

JPEG

- JPEG: designed to exploit known limitations of the human eye
- Notably the fact that small color changes are not perceived that well by human eye.
- JPEG is best for compressing images that will be looked at by humans, not other machines.

BMP

- Bmp: Standard Windows format, images created in paint applications.
- Files are huge, but accurate pixel for pixel.
- If you plan to machine-analyze your images, small errors introduced by JPEG may be a problem for you, even if invisible to the human eye.

GIF

- **Supports animations.**
- **For some types of images, GIF is superior in image quality, file size, or both.**
- **JPEG is superior to GIF for storing "realistic" scenes; photographs, continuous-tone artwork.**
- **GIF does better on images with a few distinct colors, like line drawings and simple cartoons.**
- **GIF is lossless, often compresses more than JPEG**

TIFF

- Acronym for “Tag Image File Format”
- Used frequently with documents like faxes.
- Owned by Adobe (Acrobat)

21. Now I'm really confused!

- Don't be.
- Use JPEG or JPG 95% of the time.
- JPEG is cross platform (any computer can read it).
- JPEG = Maximum compression
- JPEG = Minimum distortion

22. Can I edit my digital pictures?

- Your camera comes w/software that's pretty good, but "lite".
- Lviewpro is free, easy and great (demo) (YCbCr, 48,8,-8)
- Irfanview.com = free editing software that's also great

23. Will airport x-ray machines damage my memory or camera?

- No. Only film (and not memory) is affected by light waves.
- Memory can be damaged by temperature extremes.

24. How do I send pictures via email?

- Crop out backgrounds
- Crop to any size
- Save the picture as a JPEG if needed (demo)
- Keep somewhere easy to find.

25. What about printing?

- You can use your color printer
- Sam's Club 4X6 @ .18 (1 hr)
- Kinko's, K-Mart, Wal-Mart have a Kodak Kiosk "While-U-Wait" prints (\$5.00 per 8X10)
- Most Drug Stores (Eckerd, Rite-Aid, CVS) and even ShopRite have digital printing services.

26. Is a copy as good as the original?

- A copy IS the original, every single time.
- Not like a Xerox machine, but bit-for-bit duplication.

27. What's the "perfect camera"?

It depends on your needs...

- Ebay=2MP; parties, vacations=3MP
- Will you be using a zoom?
- Nature, sports = yes; Ebay = no
- Memory type – other devices?
- Start-up time/"next picture" delay
- Reputation, epinions.com reviews

28. Where do I find the best deal on a camera?

- Reputable Internet merchants (walmart.com, buy.com)
- Good deals on older (last year's) model that suits your needs.
- Don't fall into the "obsolete anyway" trap, afraid to buy anything today.
- Think how you'd buy a car; if you get where you want to go, keep using it!

29. What's the difference between "optical zoom" and "digital zoom"?

- Optical Zoom = Good
- Optical Zoom → like walking closer to your subject (2x & 4X examples)
- Digital Zoom = Bogus! (ignore it)
- Digital Zoom → like looking at newspaper photos through a magnifying glass; bigger dots

30. Is the camera size important?

- I don't know, is it? If it's important to YOU, then yes.
- Personally, I like a big camera.
- Small cameras are more portable, but can also cost more.
- Beware of cameras so small you can't figure out the controls because they jam it all onto one knob.

31. Why is your camera so slow?

- #1 reason: I have more time than money.
- Also, my camera is writing the image to a floppy disk, which is slower than memory cards.
- Professional cameras take 2-4 frames per second, and have fast start times.
- How important is fast start-up? You need it for nature photos, not for the family reunion.

32. What's a memory card?

- Little plastic cards where your pictures are safely stored.
- Touching can't hurt them.
- Size is printed clearly on label.
- Sizes range from 16MB--1024MB (1GB)
- Price break cautions (example)

33. Cost examples, May 2004

16 MB = 16.00	\$1.00 per MB
32 MB = 16.00	\$.50 per MB
64 MB = 25.00	\$.39 per MB
128 MB = 26.00	\$.20 per MB
256 MB = 34.00	\$.13 per MB
512 MB = 77.00	\$.15 per MB

33A. Cost examples, Oct 2004 @ pricewatch.com (w/o shipping)

16 MB = N/A	N/A
32 MB = 12.00	\$.38 per MB
64 MB = 15.00	\$.23 per MB
128 MB = 18.00	\$.14 per MB
256 MB = 25.00	\$.098 per MB
512 MB = 48.00	\$.093 per MB
1024 MB = 80.00	\$.078

33B. Cost examples, Oct 2004 @ ecost.com w/ free shipping, \$25.00 and up

7-in-1 card reader	\$8.35
32 MB = N/A	N/A
64 MB = 19.00	30 cents per MB
128 MB = 6.00 Edge	4.7 cents per MB
128 MB = 28.00 Kingston	29 cents per MB
256 MB = 7.00 Kingston!!	2.7 cents per MB
512 MB = 48.00	94 cents per MB
1024 MB = 68.00	66 cents per MB

34. What kinds of memory are there?

- CF = Compact Flash
- MMC = MultiMedia Card
- Stick = Sony Memory Stick
- SD = Secure Digital (MMC cousin)
- SM = Smart Media

35. Why is memory type important?

- If you have or plan to have other devices (MP3 player, cell phone, PDA), ideally all should be able to share memory cards.
- Demo: Duo & Moose Cam

36. Should I buy “brand names” or is generic memory okay?

- Sony Memory Stick = Sony; find best price.
- Generic memory = same as brand, often made by the same company under another name.
- Beware of pushy salespeople; bigger commission on brand memory because the markup is higher.
- Memory = no moving parts, low failure rate.
Reputable dealers replace bad memory w/in 30 days.
- Rule of thumb: If it lasts 30 days, it'll last forever.

37. What mistakes can I avoid as a novice?

- Not backing up your photos
- Falling for Digital Zoom
- Using low-res to save space
- Software you don't need
- Not taking time to play with, experiment with your new camera. RTFM.
- Sending huge files via email.

38. What about color printers?

- Dye Sublimation: Good but \$\$\$
- Color Laser: Fast, not great for pix; better for presentations
- Solid Ink: Vibrant color, \$\$\$ refills
- Thermal Wax: Vibrant, cheap, but requires special paper
- Inkjet: Best bet, 95% of the time

39. Things to Think About When Shopping for a Digital Camera

- Hold it, look through it.
- Does it have an LCD screen? Is the picture quality good?
- How's the wait time?
- Is autofocus fast?
- Is zoom easy and well-placed?