

How to Buy a Digital Camera

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1. History of MY Digital Cameras

SONY, Olympus, Minolta, Canon, Nikon, Kodak

2. What are Megapixels (from Wikipedia.com)

A **pixel** (**pix**, [1932](#) abbreviation of *pictures*, coined by [Variety](#) headline writers + *element*) is one of the many tiny *dots* that make up the [representation](#) of a [picture](#) in a [computer's](#) memory. Each such information element is not really a dot, nor a square, but an abstract [sample](#). With care, pixels in an image can be reproduced at any size without the appearance of visible dots or squares; but in many contexts, they are reproduced as dots or squares and can be visibly distinct when not fine enough. The [intensity](#) of each pixel is variable; in color systems, each pixel has typically three or four dimensions of variability such as Red, Green and Blue, or Cyan, Magenta, Yellow and Black.

A **megapixel** is 1 million pixels, and is usually used to express the resolution capabilities of [digital cameras](#). For example, a camera that can take pictures with a resolution of 2048x1536 pixels is commonly said to have "3.1 megapixels" ($2048 \times 1536 = 3,145,728$).

Digital cameras use photosensitive electronics, either [Charge-coupled devices](#) (CCDs) or [CMOS](#) sensors, which record brightness levels on a per-pixel basis. In most digital cameras, the CCD is covered with a patterned color filter having red, green, and blue regions in the [Bayer filter](#) mosaic arrangement, so that each sensor pixel can record the brightness of a single primary color. The camera interpolates the color information of neighboring pixels, through a process called de-mosaicing, to create the final image. Thus, an x-megapixel image from a digital camera can have as little as one quarter the color resolution of the same image as taken by a scanner. Thus, a picture of a blue or red object will tend to look fuzzy compared to the same object displayed in shades of grey. Green objects appear less fuzzy, since green is allocated more pixels (due to the eye's increased sensitivity for green). See [\[1\]](#) for a more detailed discussion

3. What is Optical Zoom? (web definition)

Optical zoom is a method of increasing the size or closeness of an image while using a [camera](#) that uses the physical [lenses](#) to change the [focal length](#) of the camera. Optical zoom may also be referred to as 'true zoom'. (Aren't you glad you asked?)

The practical meaning is that the physical lens can magnify the size of the image by moving optical components!

Digital Zoom is the magnification of the size of the image with the CPU in the camera!

Optical Zoom is what your eye and the lens **really** see, while Digital Zoom is what the computer in the camera **interprets** what you see! Both are represented as a number multiplication to represent the range of the camera to magnify - like 3x means 35mm to 105mm and 10x means 28mm to 280mm. Also, the more "zoom" you have, the more you need Image Stabilization or Anti-Shake technology. This system "steadies" the image on long shots. The example I use in my classes is if you held a broom handle in your hand, the longer the broom, the more it will amplify your body's movement. The longer a lens is, the more it needs to be steadied!

4. What are you going to use the camera for?

Snapshots, 8x10 or larger. Digital slideshows and special projects.

5. What type of computer do you have at home?

CPU (Pentium III, Pentium 4, Core Duo, etc.) and Mb (128, 256, 512) or Gb (1 Gigabyte = 1000 Mb) of RAM. You can check what you have by "right-clicking" on the MY COMPUTER icon on your desktop which will then show a menu with this information in the lower right-hand corner of the page that appears.

6. What to buy?

Definitely - Nikon, Canon, Fuji and Olympus.

Maybe - SONY (just acquired Konica/Minolta), Panasonic, Pentax (?) or Kodak.

NOT - HP, Argus, Honeywell, etc.

7. Where to buy it?

Camera Store if you are spending **OVER \$200!**

Wal-Mart, Target, MicroCenter, Best Buy, Costco if you are spending **UNDER \$200!**

8. How to "Research"?

<http://www.steves-digicams.com/>

<http://www.cnet.com/>

<http://www.photoxels.com/about.html>

<http://www.dpreview.com/>

<http://www.imaging-resource.com/IRNEWS>

You can send me email questions and also check for my current Schedule and Services at
www.DigitalDocOnline.com