

## Getting Great Shots from Your Digital Camera

By Deke McClelland (9/27/99)

The typical digital camera is an elementary, point-and-shoot device. Turn it on, aim it at your favorite subject, and press a button. What could be simpler?

Hold on a minute. Just because a digital camera is easy to use doesn't mean it will snap great photos. The fact is, no camera--digital or film--is smart enough to deliver excellent results without a little help from you. Despite all our technological advances, an informed user is still the best picture-taking device on the planet.

The following are our top ten recommendations for shooting the best pictures with a digital camera. With a discerning eye and a little practice, you'll be snapping pixels with the pros.

### **Before You Shoot**

We know you're anxious to get out there, but here are a few helpful tips that, if followed, will save you anguish in the long run.

#### **It's the CCD That Counts**

Before buying any camera, be sure to check the resolution of the image sensor. This may be labeled CCD, for charge-coupled device, or CMOS, for complementary metal-oxide semiconductor, depending on the kind of camera it is. At the present time, CCD is the more accepted standard and produces higher-quality images. But CMOS offers certain manufacturing advantages that will likely drive down camera sizes and prices in the future.

Some cameras claim higher resolutions than they actually capture. Polaroid's PDC-640 and Agfa's ePhoto 780 are actually the same camera, both outfitted with a 350,000-pixel CCD. Yet while Polaroid claims a maximum image resolution of 640 by 480 pixels (about 310,000 total), Agfa claims to shoot as high as 1,024 by 768 pixels (770,000 total). Agfa's software fabricates the extra 460,000 pixels by interpolating (or averaging) the pixels captured by the CCD.

The software is selective in the way it performs its interpolation, but it's not smart enough to make something out of nothing. If a face in the crowd looks like a blob before interpolation, it won't suddenly sprout a nose and eyes after interpolation; it'll just be a larger blob. Interpolation can, in many cases, yield slightly smoother photographs, but it can't generate additional definition or clarity. Simply put, if the pixel doesn't come from the image sensor, it isn't real. So when shopping, take note of the CCD pixel size, not just the resolution.

#### **Keep Extra Supplies on Hand**

Always have extra media and batteries on hand. Buy at least one extra set of rechargeable batteries so that you always have a spare set when you run out of power. And purchase an extra SmartMedia or CompactFlash card for those times when you run out of memory and can't quickly download the images to a computer. It's also a good idea to leave a couple of shots open, just in case. The moment you fill up your last card is the moment the monster rises up out of Loch Ness.

For those times when you'll be away from a computer for several days--during a vacation, for example --you might want to bring a portable storage device such as Iomega's Klik drive with you. This handheld device copies images from a SmartMedia or CompactFlash card to a tiny 40MB disk. Then you can erase the memory card and shoot more pictures. Klik disks are about \$10 each, so they're a good value, to boot. The drives have been known to fail, however, so we can't give them a wholehearted recommendation.

#### **Don't Delete Until You've Copied**

OK, it sounds obvious: Don't delete a picture from your camera's memory until you're absolutely, 100-percent positive you've copied the picture to your computer's hard drive. But it's more important than you think. The moment you delete a picture from a SmartMedia or CompactFlash card, it's gone for good. There's no retrieving it with Norton Unerase or some other fancy utility, because the data simply isn't there anymore. Camera memory isn't like a hard drive, which retains residual data. The data gets flushed, never to return.

#### **Buy a Backup Device**

The beauty of digital photography is that you print just the good ones. But this doesn't mean you have to throw away the bad ones. What looks bad now may turn out to be a treasured memory 20 years down the road. Get a backup device so you can store your pictures well into the future. There are several to choose from, but the best is a CD burner. The CDs themselves are cheap, about \$1 a pop, and they can hold 1,000 pictures or more. Best of all, they typically last longer than other forms of magnetic media and can survive water damage and other disasters.

# 10 Tips for Great Digital Photography

## *Go for Quality*

### **10. Shoot at the Highest Resolution**

Always shoot at the highest resolution your camera offers. For example, the Olympus D-620L shoots at two resolutions: 1,280 by 1,024 or 640 by 512 pixels. You can shoot four times as many of the smaller pictures, but they'll be only one-fourth as good. This goes even when shooting photos for the Web--a large original picture provides more flexibility, permitting you to crop, reduce the image size, or perform a combination of the two. Remember, you can always reduce the number of pixels in an image, but you can't magically invent more. If you shell out the bucks for high resolution --and you should--you might as well use it.

### **9. Shoot at High Quality**

You can squeeze more photographs onto a memory card by adjusting the image quality. Lower-quality settings apply higher amounts of JPEG compression, which, loosely defined, reassembles an image's pixels into a grid of square blocks. This reassembly saves space, but it makes the image look less natural as well. Most cameras let you select from three compression settings, usually defined using comparative terms on their settings' menus. For example, Kodak uses the terms Best, Better, and Good, and Fuji uses the terms Fine, Normal, and Basic. Sometimes they vary on this theme a little. Epson, for example, uses a series of stars. Whenever possible, stick with the highest-quality setting. If you desperately need to squeeze more images onto a nearly full card, switch to the second-highest setting. But don't go any lower than that--if you do, your pictures will suffer.

## *People Pictures*

### **8. Get in Close**

Ever wonder why all the vacation shots of you and your companions taken by other tourists look terrible? It's because the stand-in photographers step back half a mile away when they take the shots. With a digital camera, that means you end up taking about 15 pixels in the center of the image. Pixels are scarce, so you need to devote as many to the subject of the photograph as possible. When photographing a person, turn on the LCD and close in until that person fills up the screen. Don't take the shot until you see the whites of their eyes.

### **7. Shoot in Pairs (at Least)**

When shooting important images--staff parties, family functions, vacation photos--don't settle for a single shot. Like butterflies, digital pictures are free, so go nuts. The rule of thumb is to take no fewer than two pictures of virtually everything, four or five if the scene is even moderately interesting. Think fashion photographer: keep moving that camera and firing off shots. With lots of variations to choose from, there's a higher probability of getting a good photograph.

### **6. Shoot Big, Obvious Forms**

Pixels don't treat all objects equally. About the worst thing you can photograph with a digital camera is a tree. If the camera captures about a million pixels, and the tree contains a few hundred thousand leaves, you end up with three or four pixels per leaf, so it all smears together in a big, gummy mess. The same goes for lawns, gardens, distant mountains, hairy surfaces, or anything else with scads of intricate details. For the best results, photograph clearly defined subjects with smooth, distinct outlines. People photograph well, as do cars, buildings, furniture, and most man-made objects. Stick to obvious foreground subjects that stand out clearly from their backgrounds, and you should be fine.

## *A Light Touch*

### **5. Eliminate Red-Eye**

If you've ever shot a picture with a flash, you've no doubt encountered red-eye, in which everyone's pupils turn bright red, giving them a mildly demonic look. The culprit is dilated pupils. In dim light, the pupils are nice and big, permitting the flash to bounce off the inside of the retina and reflect back into the camera lens. One solution is to turn on your camera's red-eye reduction flash. This provides a preflash, which reduces pupil sizes so that the second flash is reflected harmlessly off the iris. The problem with a preflash is that it causes people to blink--and most of us would rather get red-eye than a bunch of closed eyelids. A better solution is to turn on a few lights or to shoot in a shaded area outdoors. By shining some light on a situation, you reduce pupil sizes naturally and limit your risk of red-eye.

#### **4. Shoot Outside in Indirect Light**

Most digital cameras offer built-in flashes, but they're not very good. When shooting in a dimly lit room or at night, a subject a few feet away will appear as a luminous ghoul against a pitch-black background. For the best results, shoot outside or in a naturally lit room during the day. A little cloud cover or tree shadow helps to soften the harsh color transitions you often get in direct sunlight. Counterintuitive as it may sound, low contrast is better than high contrast. There's nothing worse than a large area of white (called a hot spot) or black in a photo, because there's no way to fix it.

#### **3. Use the Flash in Backlit Conditions**

The best use for a cheesy consumer flash is to fill in shadows in full daylight. When you photograph a person against a bright sky--a condition called backlighting--the camera averages the light from the person and the sky and comes up with an intermediate exposure. But that exposure is too brief for the person and too long for the sky, so you get a dark silhouette against a blindingly bright background. The solution is to turn on the flash, a technique called fill-flashing. This not only lightens up the person, it also reduces the exposure so that the sky appears less bright.

### ***Digital Expertise***

#### **2. Avoid Digital Zoom**

Many digital cameras offer two kinds of zoom: an optical zoom and a digital zoom. Of the two, the optical zoom is the only one you should use. An optical zoom uses a system of lenses to refract light and to magnify an image onto the CCD. The result is expanded detail and clarity. A digital zoom crops and enlarges images, inventing pixels through interpolation. The result is a magnified but fuzzy image. If an optical zoom doesn't enlarge an image sufficiently, walk closer to your subject, but try to avoid the digital zoom.

#### **1. For Close-ups, Use the LCD**

Very few digital cameras under \$1,000 offer single-lens reflex (SLR) viewfinders, the kind in which you and the camera see through the same lens. Far more popular is the rangefinder design, in which you see through one lens, the optical viewfinder, and the camera sees through another, the primary lens element. Although these lenses are designed to converge at the same point, they can't help but vary slightly as you zoom in and out. And they may vary dramatically during close-up shots, a phenomenon known as parallax. Therefore, most optical viewfinders are highly suspect.

The more accurate framing device is the LCD screen: turn it on and you get a live video feed directly from the CCD. Consequently, what you see on the LCD screen is more representative of what you'll get. Be aware, however, that the LCD requires scads of power and quickly drains the batteries. A standard set of rechargeable AA cells will last about 50 to 80 shots with the LCD turned on, compared to four times that many with the LCD off. So limit your use of the LCD to close-up shots, and keep an extra set of batteries fully charged and close at hand.