

Chapter 1: The Essentials of Good Digital Photography

In This Chapter

- ✓ Choosing equipment
- ✓ Making great digital photos
- ✓ Converting other photos to digital format
- ✓ Making hard-copy prints

In 1888, George Eastman began promoting the first hand-held Kodak camera with the slogan, “You press the button, we do the rest.” His idea was to make the camera as ubiquitous as the pencil. However, the film king’s dream didn’t really come true until the invention of the digital camera.

Certainly, conventional photography has long been as simple as pressing a button, but the “we do the rest” part — taking the film to a photo lab, deciding what size and kind of prints to make, and then waiting for the results — is a lot less convenient than using a pencil.

Digital photography has finally put the entire process of making pictures in the hands of the person holding the camera. You compose the picture through the viewfinder (as always), but now you can preview the exact photograph that you’re going to take with a bright liquid crystal display (LCD) screen on the back of your camera, or through an electronic viewfinder inside. Then, after snapping a shot, you can instantly review the photos you’ve taken and erase the bad pictures on the spot.

Even better, you don’t need to remember to stop and buy film; digital “film” (storage memory) is almost infinitely reusable. And you don’t have to drop off film for finishing any more: It’s “processed” instantly, ready for viewing or printing from your own inexpensive color printer. Wow, no more sifting through stacks of prints of marginal images. You decide which images to print up and whether to make them 4 x 6 inches or 5 x 7 inches or some other size.

You also don’t need to fret if your images aren’t exactly right or could benefit from a little cropping. With an image editor, such as Photoshop cs or Photoshop Elements 3.0, you can fix bad color, remove your ex-brother-in-law from a family photo, or adjust the borders of an image to focus on the most interesting subject matter.

Digital photography puts everything in your hands: You press the button, and you can do as much of the rest yourself as you're comfortable with. If all you want to do is point and shoot, you can do that. Taking photos and making prints can be as simple as snapping a picture and then slipping your digital film card (also referred to as a *memory card*) into a slot in your color printer to crank out selected snapshots. Or, you can take your memory card to a kiosk or digital workstation at your local retailer and make prints there. On the other hand, if you want to have full control over your photos, digital photography gives you that, too, to a degree that has never before been possible.

This chapter provides an overview of the sort of things you can find out how to do in this book. I cover each topic in more detail in a mini-book and chapter of its own.

Knowing What Equipment You Need

I realize that not all of you are curled up with this book in one hand and a digital camera in the other. You might already have a digital camera and have just purchased this book to find out exactly what you can do with it. However, I'm guessing that quite a few of you haven't taken the plunge yet. You bought this book to find out more about digital photography before expending your hard-earned money on the equipment you need. You have questions that need answered first: Can a camera that I can afford do the things I need it to do? Can a computer fumble-fingers like me really do digital photography? What's the best camera to buy? Others of you are digital camera veterans who are already thinking of upgrading. You, too, need some advice about equipment, which you can find in this book.

Choosing a digital camera that's right for you can be tricky because a lot more goes into your selection than simply the specifications. Two cameras with identical specs can perform quite differently. One can exceed your expectations while the other one frustrates the heck out of you. I explore some of the subtleties of camera selection in Chapter 2 of this mini-book.

However, if you want to get the most from this book, your digital camera should have certain minimal features and capabilities. For example, if your digital camera is one of those Web cams that can capture stills measuring 320 x 200 pixels, or maybe 640 x 480 pixels, you probably don't have what you need to take serious or semi-serious digital photos.

One of those \$79 digicams with a lens that can't be focused, no exposure controls, and no removable storage probably won't do the job for you, either, other than as a fun toy. If you believe the adage, "Any camera is better than no camera," go ahead and slip one in your pocket and be ready to take a snapshot anytime, anyplace (as long as there is enough light, your subject holds still, and a wallet-size print will suffice). Such a minimalist digital photo system, however, won't enable you to do much.

Any digital camera costing a couple hundred dollars or more will probably do a fine job for you. Even the least-expensive, true digital cameras today boast resolutions of at least 2 megapixels (MP). (That is, at least two million pixels of information, usually 1600 x 1200 pixels or more.) Typical digital cameras have automatic exposure, a color LCD viewing screen for previewing or reviewing your photos, and removable storage so you can take out your digital film card when it's full and replace it with a new one and keep shooting. Most have a zoom lens so that you can magnify an image without moving forward, which is invaluable when you want to take pictures of different subjects from one spot.

Those minimum specs give you everything you need to take great photos. After all, it's the photographer, not the camera, that produces the best images. I once wrote an article for *Petersen's PHOTOGraphic* magazine, in which I presented photos of the same subjects, side-by-side, taken with an inexpensive point-and-shoot camera and a full-blown professional system that cost 100 times as much. After both sets of photos had been subjected to the vagaries of halftone reproduction, it was difficult to tell them apart.

Spending a lot on a digital camera buys you a few new capabilities from better zooms, enhanced resolution, interchangeable lenses, or a more sophisticated built-in flash. If you have a full-featured model, you can find lots of information in this book on how to get the most from your camera's capabilities. But this book also contains workarounds for those owning more modest equipment.

You can find digital cameras suitable for the most exotic of photographic pursuits, such as the underwater set-up shown in Figure 1-1. It's a Canon WP-DC300 waterproof case for the Canon PowerShot S50 digital camera. It provides full access to all your camera's controls while letting you photograph those colorful coral reefs in Tahiti at depths down to 100 feet!

Figure 1-1:
Even
underwater
photography
is possible
with modern
digital
cameras.



Minimum and Maximum Specs

For most of this book, I assume that you have a digital camera with at least 2MP of resolution. (If you don't understand resolution right now, see Chapter 2 of this mini-book for an explanation.) A camera with a 2MP sensor corresponds to about 1600 x 1200 pixels, which is enough detail to give you decent 6 x 8" prints or larger at 200 dots per inch (dpi) printer resolution. A 2MP camera also can capture enough information to allow some cropping, especially if you plan to use the image on a Web page, where high resolution isn't necessary. A 5MP resolution was a standard midrange spec as I wrote this book.

However, if you have an older 1.0–1.3MP camera, you can still do plenty of things, even though such cameras are becoming rare. You can prepare images for dynamite Web pages and make sparkling 4 x 5" prints. I still use an ancient Epson digital camera that maxes out at 1024 x 768 resolution to take pictures for eBay auctions; most of the time, the snaps are taken at a lower 640 x 480 setting that's plenty sharp enough for photos shown at small sizes.

Cameras with up to 8MP of resolution have dipped into the \$1,000 range and will probably become common during the life of this book. If you own one of these babies, you can do even more. You can make tack-sharp 8 x 10" prints (and even larger prints if your printer supports them), crop out the center of an image, and still have sharpness to spare. Your camera will have loads of automated features, such as automatic *bracketing* (taking several exposures at different settings to make sure one is ideal) or a very long zoom lens (to reach way out and capture distant objects).

Although I seem to focus on the number of pixels a camera has, other considerations, such as the zoom lens that I just mentioned, might also be important to you. Even the least expensive cameras can have a 2:1 to 3:1 zoom, which can magnify an image 2X and 3X (respectively). Better cameras have 4:1 or longer zooms, up to 12:1 or more. Your camera probably has *macro*, or close-up, capability, which lets you grab images from inches away from your subject. Book III, Chapter 2 is devoted to close-up techniques.

Most of the other components (such as amount and type of memory storage, manual/automatic exposure and focusing options, built-in flash capability, and so on) can vary widely. You can find discussions of these in Chapter 2 of this mini-book.

Although I've been using single lens reflex (SLR) cameras (both digital and conventional) for more years than I care to think about, very little in this book actually requires a digital SLR to achieve. However, now that digital SLRs from Canon, Nikon, and Minolta are available for about \$1,000, I expect a much larger percentage of readers will own a camera with what were until

recently considered high-end capabilities. Those of you with these sophisticated cameras should still find lots to like in this book because one of my goals has been to present pro-level techniques in ways that can help beginners, too. If you have a digital SLR like the one shown in Figure 1-2, you'll find these techniques even more useful.

One thing that I avoid in this book is mentioning specific camera models except as a matter of interest from time to time. My oldest digital camera in regular use is a half-decade-old (plus) Epson PhotoPC 600. When camera model matters, I might mention 6MP or 4MP or 2MP models in a generic sense. You won't find any discussion in this book about the relative merits of the latest Nikon or Canon cameras or other references that will be hopelessly outdated in a few months. (Those of you reading this in the year 2006 with your \$400 12MP cameras should refrain from laughing.)



Figure 1-2: Digital SLRs are less expensive now and well within the reach of the serious amateur photographer.

Taking Great Digital Shots

So, when you have a camera in hand, what do you need to know to take great digital photos? In this section, I discuss the knowledge that needs to reside in your brain (or be otherwise available) to take great pictures.

Understand how your camera works

No digital photography book can tell you how to turn on your camera, how to adjust the autoexposure settings, or how to use your model's self-timer to take a picture with you in it. Those are things found only in your camera's instruction manual. Read it. I promise that the information you seek is in there; it just might be hard to find. The instructions for my own Nikon digital camera are so cryptic that I found myself creating a cheat sheet with lists of steps, such as, "To turn off the autosharpening feature, press the Menu button, then. . . ."



Some of the techniques in this book call for using a specific exposure mode or lens setting. I might ask you to switch to your camera's close-up mode to take photos a few inches from your subject. You might need to use your camera's built-in flash. Learn how to do these now so that you can add some simple but effective tools to your shooting repertoire.

Know some photography fundamentals

Certainly, you can point your camera and snap off a picture that might turn out great. Some prize-winning shots were taken in an instant as a fast-breaking news event unfolded without warning. Amateur photographers took more than a few of those photos, such as the famous Pulitzer Prize winner of a woman falling from a burning hotel captured by a 26-year-old Georgia Tech student. However, whatever part instinct and luck take in the production of great pictures, a little knowledge can be much more important.

- ◆ **Composition:** If you know a little about composition, you can nudge your images into a more pleasing arrangement. (See Book III, Chapter 1, for a full course in photographic composition.)
- ◆ **Focus:** Understanding how focus can make parts of your image sharp or blurry gives you the freedom to use focus selectively to isolate or emphasize subjects (see Book III, Chapter 2).

- ◆ **Shutter speeds:** Some background in how shutter speeds can freeze action can improve your sports photography (see Book III, Chapter 5).
- ◆ **Lighting:** Although you don't need to become an expert in lighting effects, understanding how light works can improve your people pictures (see Book III, Chapter 3).

Find out how to use an image editor

In digital photography, the pseudo-snap of an electronic shutter is only the beginning. With an image editor, you can do lots of things after the shot to improve your photo or even transform it into an entirely new one. Simple image editors enable you to crop pictures, fix bad color, or remove defects such as those glaring red eyes found in many flash photos. However, you can find even more creative freedom in more advanced image editors that let you do anything from eliminating trees that appear to be growing out of your subject's head to bringing seriously damaged photos back to life. If you want to polish your reputation as an all-around digital photographer, plan on developing at least a modicum of skill with a decent image editing program. You'll find general information on a broad range of image editors in Book IV as well as specifics on Adobe Photoshop CS and Photoshop Elements 3.0 in Book V.

Master a scanner

Digital photographers don't *have* to own a scanner, but you don't *have* to own a camera bag or an extra digital film card, either. Like other digital accessories, a scanner provides you with some supplemental techniques that let your scanner complement or substitute for your digital camera. For example, a scanner can be used for producing close-up images of relatively flat three-dimensional (3-D) objects, such as coins. A scanner can grab pictures of very small objects (less than 1 x 1 inch) that are difficult to capture with a digital camera.



The exact kind of scanner you have isn't important as long as it's a flatbed model, like the one shown in Figure 1-3. I explain the differences between the major types of flatbeds and how their capabilities diverge (that is, some scanners can be used to scan 3-D objects, whereas others can't) in Book II, Chapter 4.

Figure 1-3:
Flatbed
scanners
can turn any
print into a
digital
image.



Making Any Photo Digital

In this book, you can also find out how to transform any photo you happen to have into a digital image. Scanners are one way to do this: Slap an existing photo down on the scanning bed, scan it into your image editor, and you have a digital image that's the equal of anything you might capture with your digital camera — except it's likely to have dust spots!

Or, drop off your film at your local photo lab and request a Picture CD along with (or instead of) your prints. Picture CDs and their cousin Photo CDs can be produced from slide film, too, or even stacks of existing prints. What you receive for your money is a high-resolution scan of your images, perfect for manipulating in your image editor and printing on your own color printer. You don't even need to own a scanner: Your photo lab does all the work for you.

Another option is using a local or mail-order service that processes your film and puts the finished images on the Internet. You can download your photos to your computer or make them available for viewing by family, friends, and colleagues on a Web page. What could be easier? You can find more information on this topic in Book VII, Chapter 2.

Printing Your Final Pictures

The final piece of the digital photography puzzle is the hard-copy print. You can create photos electronically, view them on your computer, post them on your Web site, and send them to others as e-mail, but nothing beats having a stack of prints to pass around or an enlargement to hang over the fireplace.

In Chapter 6 of this mini-book, you can find basic information on making prints, and you can find more advanced advice in Book VII. The good news is that the equipment you need is inexpensive and easy to use. A photo-quality inkjet printer can set you back \$100 or so. It probably plugs directly into a USB port on your computer and requires little or no setup. Making the prints can be a point-and-click operation. A variety of printers can do the job for you. The one shown in Figure 1-4 has slots for your camera's memory cards and an LCD display that shows each photo you took, so it can produce prints directly from your digital film, with no computer required at all!



Figure 1-4:
Producing
sparkling
prints is fast
and easy.

The bad news, if it can be called that, is that the cost of materials can seem a little high. You can pay \$1 or more just for the paper and ink for a single 8 x 10" print. However, I show you some money-saving tips in Book VII, Chapter 1. The best news is that unlike a photofinishing lab, you don't make a print of every single photo you take. You can view your prints on your computer display and make hard copies of only the very best. From that angle, making your own prints isn't expensive at all. You're printing only the pictures you want — and in the long run, probably paying a lot less overall than you used to spend on those prints that end up in a shoebox.