Buying a Digital Camera

Chapter 1

The right digital camera for you becomes a handy tool for recording precious memories. You'll snap shots of your friends, family, pets, and special events to preserve forever and look back at fondly years from now.

Photos don't just freeze the past. With a digital camera, you can stay in touch with people no matter how distant. Let them see what you're up to, at home or while you travel. A vacation snapshot makes the best postcard.

Your camera should be a good fit for you — not too small, not too large, and not too heavy. You want to feel comfortable carrying your camera, so that you'll always have it nearby, even when you don't expect to need it.

Buying a camera doesn't have to be a difficult decision. As with any device, some features matter more than others. You may choose a camera by price, size, picture-taking features, or even the color of its body. Dozens of camera manufacturers sell countless models. In this chapter, I introduce you to digital cameras and the features you may want in your next camera. This information will help you navigate through ads and reviews to find the right fit.

Get ready to . . .

Explore Types of Digital Cameras

Cameras have a wide range of features. Expect features such as *automatic scene modes*, which are settings that are designed for taking pictures in particular conditions, such as at night or at a sporting event. Some cameras are extremely compact, while others are larger and accept add-on lenses. The number of features available is determined by the type of camera:

- **Compact,** *point-and-shoot* **cameras** are small and easy to use, as the name implies. You don't have to worry about having too many options or controls with most point-and-shoot cameras. This is a great camera type for casual photography and snapshots. Most manufacturers, including Casio (as shown in **Figure 1-1**), Kodak, and Olympus, sell models in this category.

Figure 1-1

- **Digital single-lens reflex (DSLR) cameras** are the choice of professionals and serious amateurs or hobbyists. Unlike a simple point-and-shoot camera, a DSLR has many features designed to give you control over every aspect of picture taking. DSLRs have a faster response time than other types of cameras, with almost no delay between the moment you click and when the photo is taken. (Non-DSLR cameras often have a fraction-of-a-second delay.) Canon and Nikon dominate the DSLR category. **Figure 1-2** shows a Nikon DSLR camera.

Figure 1-2

- **Bridge or *prosumer* (a combination of professional and consumer) cameras** fill the gap between the casual point-and-shoot camera and the highly controllable, professional-level DSLR camera. Some reviews classify bridge cameras as point and shoot in spite of

their extra features. Falling between the other camera styles in features, size, and price, a bridge camera is a good choice for someone who wants more options than those that come with a point-and-shoot camera without the more complex and expensive features of a DSLR. Manufacturers of bridge cameras include those named in the preceding categories plus Panasonic and Sony. **Figure 1-3** shows an example of a Sony bridge camera.

Figure 1-3

Choose a Price Range

Camera prices start near $50. Anything less than that may not really be a bargain — though it might make a good door stop. Consider these price ranges:

- **Cameras between $50 and $250:** These cameras are usually compact, pocketable, easy to carry, and easy to use. Perfect for casual photography, these less expensive point-and-shoot cameras can't be expected to provide all the bells and whistles of more expensive models. Still, don't feel you have to spend more than you want to. You have to start somewhere, and a reasonably priced camera makes sense if you don't need all the features found in more expensive cameras.

Cheaper cameras may need more time to turn on, store pictures, or ready the flash than more expensive models need. Response time matters if you plan on shooting photos in rapid succession, such as at a fast-paced event.

- **Cameras between $250 and $600:** These cameras offer more features than cheaper cameras, such as additional automatic settings for shooting in a wider range of conditions. These cameras are likely to be larger and heavier. This price range includes some point-and-shoot cameras and all of the bridge models. You may find a cheap DSLR body at the high end of this range, but that won't include a good lens. You may need to spend more time exploring and figuring out the features of these cameras.

- **Cameras above $600:** These DSLR cameras have features that professional photographers and advanced amateurs crave, including exchangeable lenses and more direct control over combinations of settings. There is no upper limit to what you can pay; it would be easy to spend $1,000 to $3,000 on one of these high-end cameras and the accompanying gear.

The CNET Web site (`http://reviews.cnet.com/digital-cameras`) compares cameras by price.

Identify the Features You Want

Do you want a camera that fits in your pocket or purse to pull out for spontaneous photos? Do you want to get close to flowers or wildlife? Is photography your passion (or can you imagine it becoming that)? As you look at cameras, consider which features matter most to you. The following lists describe all the features and options you should consider before you purchase a digital camera.

Consider these features first, because they matter to most photographers:

- **Ease of use:** If you want decent photos under most conditions without making many decisions, look at point-and-shoot models such as Canon Power Shot, Kodak EasyShare, Nikon COOLPIX, or Sony Cyber-shot.

- **Scene modes:** These options set up the camera for taking the best photos under different conditions. Landscape mode works best for, well, landscapes — long, sweeping shots of vistas with lots of scenery. Sports or Action mode freezes action at an athletic event or captures fast-moving wildlife. Portrait mode puts the emphasis on a person. Some cameras provide you with a dozen or more scene modes to choose from. In Chapter 4, you can practice working with some of these modes.

- **Face and smile detection:** Some cameras recognize faces in a scene and focus on those faces automatically, ensuring that part of the photo will be sharp. Some cameras can even detect when subjects are smiling and can take a picture at the precise moment everyone in the scene is smiling. Some cameras also warn you if a subject blinked.

- **View options:** A *viewfinder* lets you hold the camera up to your eye to compose or frame your photo, just like a film camera. An *electronic viewfinder* (EVF) displays information about camera settings superimposed over the scene. An LCD is a small screen on the back of the camera that you can use instead of an electronic viewfinder. Using the LCD to take a picture, you hold the camera away from your face, up to arm's length. An LCD makes it easy to see the pictures you've taken and to use the setup menus most cameras have.

A camera with both an electronic viewfinder and an LCD screen gives you the best of both worlds. If you wear glasses, you'll appreciate having a way to adjust the viewfinder focus to suit your glasses. This option is sometimes called a *diopter correction* knob or wheel.

- **Battery type:** All cameras use batteries to power every aspect of operation. You can use up your camera batteries in one day if you take lots of photos. Check to see if the camera you are considering uses a special battery (like a cell phone does). A spare special battery could cost between $30 and $60, so you might want a camera that uses two or four standard AA batteries. Rechargeable batteries are a must — don't use regular one-use batteries.

- **Control types:** The more options a camera has, the more controls it probably has. Many cameras use a dial for scene selection. Other functions may use buttons — often tiny buttons. Cameras even use rings, joy-sticks, and touch screens. Controls can be easy and intuitive or not, depending on the camera and on you.

The following features may be important to you if you intend to take more than casual snapshots:

- **Close-ups:** A macro setting allows you to put the camera extremely close to the subject, even less than an inch away. The result is an extreme close-up that reveals details that are often missed, such as the heart of a flower or the pattern on a butterfly's wings. **Figure 1-4** shows a composite shot of an extreme close-up of a flower. The regular shot on the left is out of focus, while the macro shot on the right is in focus.

Regular focus

Macro shot

Figure 1-4

- **Distant shots:** A zoom lens ranges from near to far, bringing a distant subject closer to you. You can photograph an entire sports team or zoom in to photograph one player. If you plan to photograph birds and other wildlife, you want an extreme zoom — 10X or larger — to bring distant subjects closer.

  Most point-and-shoot cameras are limited to a 3X zoom; bridge cameras and so-called ultrazooms zoom to 10X and beyond. The X factor (10X, 3X, and so on) indicates the magnification from a normal, unzoomed, so-called *wide-angle shot* taken with that camera and a zoom shot, also called *telephoto*. A 3X zoom is adequate for most close-ups of people and pets. A 12X zoom will bring distant subjects much closer to you, as shown in **Figure 1-5**.

Differences between one camera's wide-angle and another's make it tricky to compare zoom factors (zoom is a multiple of wide-angle). Look for so-called *35mm equivalents,* which convert these lens measurements into the standard of film cameras for more accurate comparisons between camera models. A 10X zoom is likely to be equivalent to something between 280mm and 380mm, depending on the wide-angle portion of the lens.

Ignore references to *digital* zoom or *combined* zoom. *Optical* zoom is the measurement that means the most when you're comparing cameras.

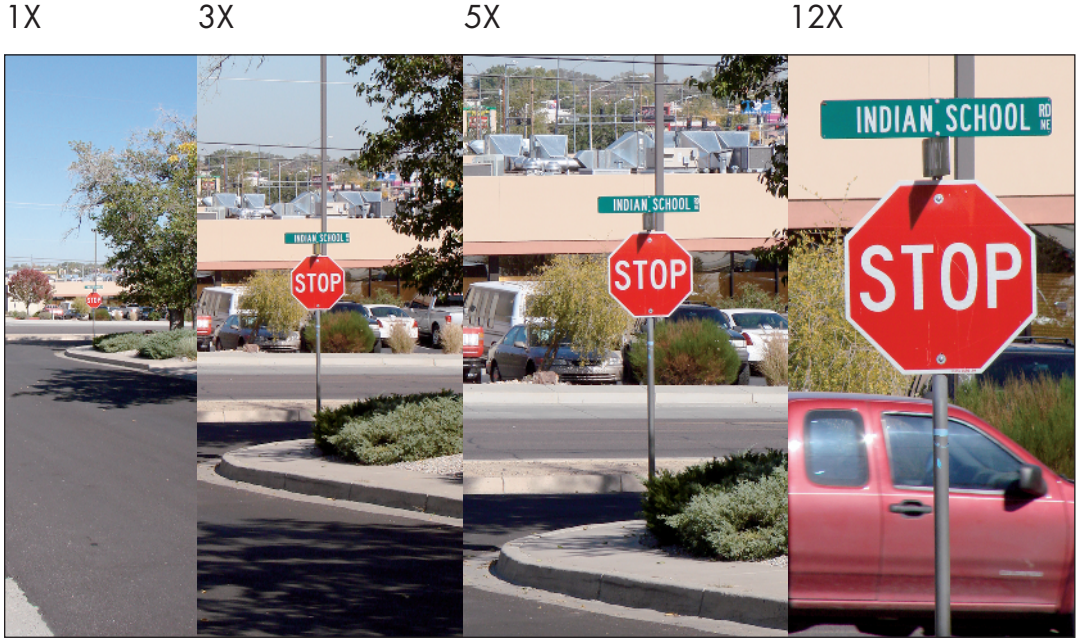

Figure 1-5

Image stabilization: If your camera moves as you take a picture, the photo may not be sharp. Even if your grip is rock-steady, the slightest movements can ruin a long-distance zoom shot. (The longer the zoom or the darker the scene, the worse the effect

movement will have on the shot.) Be sure your camera has an image-stabilization feature (also called *antishake* or *vibration reduction*), which assures sharp focus in spite of normal minor movement.

- **Focus modes:** All digital cameras focus automatically. However, some cameras provide multiple focus modes, such as center focus, multiple spot focus, and manual focus. *Center focus* assures you the subject in the center of the frame is in focus, while other areas may be blurred, which can be used to make the subject stand out from the surrounding scene. *Multiple spot focus* assures that all areas of the photo are in focus. *Manual focus* lets you specify the distance between the camera and the subject in feet or meters.

- **Image resolution:** The *image sensor* is a computer chip with a light-sensitive surface that captures photos. The width and height of a photo are measured in tiny dots called *pixels,* and the area of the photo is measured in millions of pixels (*megapixels,* MP). The more megapixels a camera has, the larger a photo it takes.

  Having more megapixels is especially important when you want to edit (see Chapter 10) or print (see Chapter 12) the photo. The megapixel total is less important if you don't plan to print or edit. Smaller photos are fine for e-mail and on-screen viewing. A typical edit is to *crop* or cut a portion of the picture to make the subject fill more of the frame. Having more megapixels allows you to crop a smaller area of the picture and still have a big enough picture left over to enjoy.

- **Memory card:** In a digital camera, photos are stored as digital files in the camera. Although some cameras have built-in, non-removable memory for saving pictures, that is usually limited to a few photos. Most

cameras use removable *memory cards* to enable you to save more photos. Consider buying more than one memory card if you plan to shoot more photos than one card can hold before you can delete photos or move them to a computer. Buy a large capacity memory card — at least 1 gigabyte (1GB) — that is the correct type for your camera. Read the camera specification on the box or in the manual to identify the correct card for your camera. The wrong type of card won't fit your camera. **Figure 1-6** shows four typical memory cards.

Figure 1-6

- **File format:** Photos are usually stored as JPEG files (JPEG stands for Joint Photographic Experts Group), which is an optimal file format for photos. Some bridge cameras or DSLRs store photos as RAW files, which may be a better file format for you if you plan to edit your photos extensively on your computer by using advanced software tools. I talk more about photo editing in Chapter 10.

The following features may be nice to have or more than you need:

- **Red-eye fix or reduction:** When a camera flashes, light may reflect from the back of the subject's eye, producing *red-eye,* a rather creepy effect. Some cameras have red-eye reduction settings or features, such as producing two flashes in a quick sequence: The first flash contracts the subject's pupils, and the second is used for the actual snap of the photo. Other cameras can remove red-eye automatically. You can also fix red-eye later, with photo-editing software.

- **Special effects:** In-camera processing options can let you add effects to your photos, such as shooting in black and white, sepia, or pastel colors. But don't worry: If your camera doesn't offer these options, you can add many effects to photos later by using photo-editing software on your computer.

See the Cheat Sheet inside the front cover of this book for a list of camera features and recommendations on what to look for as you compare cameras.

Research Digital Cameras on the Web

Many Web sites offer information about digital cameras and feature reviews by people who have bought and used a particular camera. You can also go online and compare camera prices from different vendors.

Online reviews often include detailed photos of the camera's features, as well as sample photos taken with the camera. The best camera reviews grade specific features, such as the preset scene modes and the camera's setup menus, which are hard to judge without hands-on experience.

Consider the ratings and reactions of individual buyers with a grain of salt. You don't know whether the reviewer wants the same things in a camera that you want. Look at as many comments and reviews as you can to get a consensus reaction. Many Web sites summarize user ratings.

If you don't have a computer, most public libraries and many community centers do, and a librarian can also help you get online.

Look for camera reviews at these Web sites (**Figure 1-7** shows the Web page from `http://reviews.cnet.com/digital-cameras`):

- `http://reviews.cnet.com/digital-cameras`
- `www.dcviews.com/cameras.htm`
- `www.digitalcamerareview.com`
- `www.imaging-resource.com`
- `www.steves-digicams.com/hardware_reviews.html`

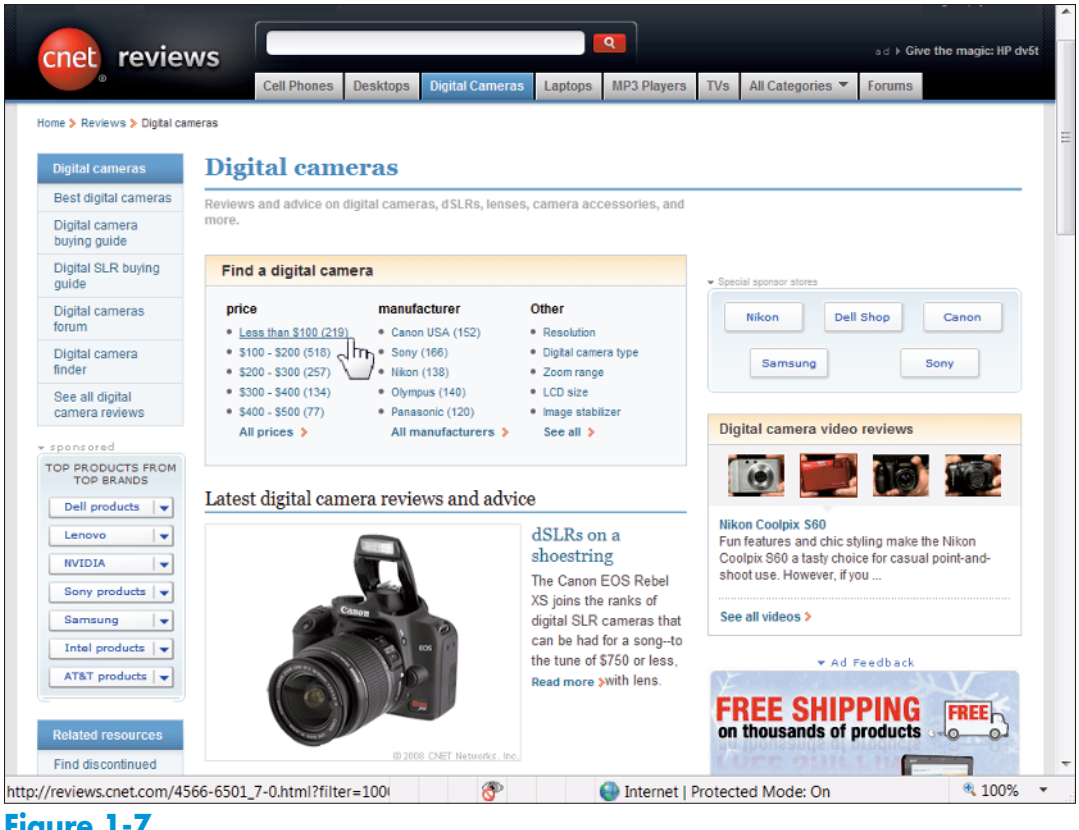

Figure 1-7

You can also visit camera manufacturer Web sites for details on different models. Here are some to check out:

- www.canon.com
- www.nikon.com
- www.olympus.com
- www.panasonic.com
- www.sony.com

In addition, check out these opinion-sharing Web sites:

- www.epinions.com/Digital_Cameras
- www.viewpoints.com/Digital-Cameras
- www.flickr.com/cameras

If you're ready to buy, and you want to do your purchasing online, check out the following sites — but be sure to look for customer ratings and reviews before you click the Buy button:

- www.amazon.com/camera
- www.47stphoto.com
- www.ritzcamera.com

Get Your Hands on a Camera in a Store

The Web can't tell you whether a camera fits comfortably in your hands or whether the buttons are small or difficult to reach. You have to hold a camera to find that out. Consider going to a couple of stores so that you can handle a few different cameras.

Look for a store with a camera kiosk that groups cameras together, like the kiosk shown in **Figure 1-8**. Pick up each camera and pretend to

take a picture. How does it feel in your hands? Consider the camera's shape, size, and weight. Is the Shutter Release button (usually a wide, flat button on the right side on top of the camera body or grip) that you press to take a photo a comfortable size and in a convenient place?

Here are some stores to check out:

- Office supply stores, such as Office Max and Office Depot
- Discount clubs, such as Costco and Sam's Club
- Electronics retailers, such as BestBuy and Target

These stores all have Web sites, too, if you prefer to shop online. But again, it's a good idea to spend at least a little time in a store where you can actually hold some cameras in your hands.

Figure 1-8

If you choose to do your shopping at a camera store — a retailer that specializes in cameras and camera equipment — you should expect to find knowledgeable, experienced staff. You should also expect to have access to less-common camera models than electronics retailers carry. You're likely to find higher-end, more expensive cameras in a camera store. But if you're shopping for a DSLR, that's exactly the type of place you should check out.

Keep in mind that the models you find on display in a store may not be the same models you've researched online. If you like a camera you haven't already researched, take the time to do that research. Beware impulse buying.

Select Accessories

Tools (or toys) beget more of the same. You may just be looking for a camera, but you'll find plenty of camera accessories to consider:

- **Spare memory card:** Definitely consider having a spare card on hand, especially if you'll be shooting a lot of photos before you can delete any of them or move them onto a computer. A full card is like running out of film — you can't take any more photos. A large memory card may hold hundreds of photos, however, so depending on how much shooting you plan to do, one card may be all you need.

- **Camera cables:** For some cameras, a cable connects the camera to a USB port of a computer for transferring photos from the camera to the computer. This connection is essential if you want to view your photos on your computer monitor, e-mail them to friends and family, or edit them with photo-editing software. (You find out how to copy photos to a computer in Chapter 8.) Some cameras use a cable to connect to a TV or DVD player for displaying photos on TV.

- **Card reader:** This device is another way to get your photos from the camera to your computer. A card reader accepts a memory card you have removed from your camera, and then you connect the card reader to a USB port of your computer. You don't need a card reader, however, if your camera connects directly to the computer with its own cable.

- **Spare batteries:** These are always good to have on hand. You can easily drain a set of batteries in a day. If you run out of power, you're done taking pictures. Rechargeable batteries are a must. Practice replacing your batteries so that you can do so quickly when you need to.

- **Battery charger:** This item will be a welcome addition on longer trips, such as a vacation. If you're traveling out of the country, add an electrical outlet adapter. If you're traveling by car, get an adapter for your car cigarette lighter so you can charge as you drive.

- **Camera bag:** This handy accessory keeps all your gear in one safe place. Look for a padded bag large enough for the camera plus everything else. The bag or a compartment of the bag should snuggly hold your camera. Most camera bags have a handle and a shoulder strap. Small bags may have loops for a belt.

- **Tripod:** You attach your camera body to a tripod to hold your camera steady. Tripods are also great for photos taken with a timer so that you can jump into the picture. (Make sure your camera has a metal tripod socket on the bottom of the body.) A tripod is also useful for holding the camera still for shots taken in low light or when you're using a long zoom.

  You may want a large tripod up to 6 feet tall with telescoping legs, although not everyone needs such a big one. However, almost anyone will get good use out of

a pocket-sized, fold-up tripod that costs around $10. Some small tripods use a beanbag instead of the traditional three legs (is it still a tripod, then?) to provide a steady base that can rest on an irregular surface, such as a rock. **Figure 1-9** shows some of the different sizes of tripods you can choose from.

- **Monopod:** It's like a tripod, but this variation has a single leg instead of three. (In Figure 1-9, the monopod is on the far left in the background.) It also has the usual tripod screw at the top. A monopod won't stand without your help, but it can help you steady the camera. If you need increased steadiness for your photography, but you're frequently on the move, a monopod may be a better choice than a tripod because it's easier to move around. Some walking sticks even have monopod attachments at the top of the pole. Check sporting goods and outdoor retailers.

Figure 1-9

- **Printers:** You have all kinds of very affordable printer options these days — printers that can produce glossy enlargements or high-quality smaller prints. But don't buy a printer until you've read Chapter 12.

- **Computer:** This is more than just an accessory. A computer gives you ways to store, edit, and share your photos. You can enjoy a digital camera without owning a computer, but you'll enjoy your photos more with a computer. Part III covers the digital photography reasons you'll want a computer.

Unpack and Set Up Your Camera

1. When you get your camera, lay out all the items that came with it and confirm that you received everything you expected from the packing slip, box label, or ad. If your camera came with specific step-by-step instructions for setting up the camera for its first use, follow those steps instead of these before you take your first picture.

2. Remove all packaging, including tape. Store this material until you're sure you won't need to return your camera to the seller.

3. If your camera has a neck or wrist strap, thread the strap ends through the slots on either side of the camera body. Take care to attach the strap securely. Test it gently. You don't want your camera to fall off this strap.

4. Install the memory card, if you have one. Look for a small cover on the bottom of the camera or either side. Some cameras have one cover for both memory card and batteries, as shown in **Figure 1-10**. Open the door by pushing or sliding the cover. With your thumb on the label side of the memory card and any exposed metal contacts away from you, gently insert the card into the card slot. If you meet resistance, pull the card out and turn your hand to

try inserting the card the other way. The card should slide in easily and stay in. (It may click in place.) Do not force the card. Close the memory card slot cover.

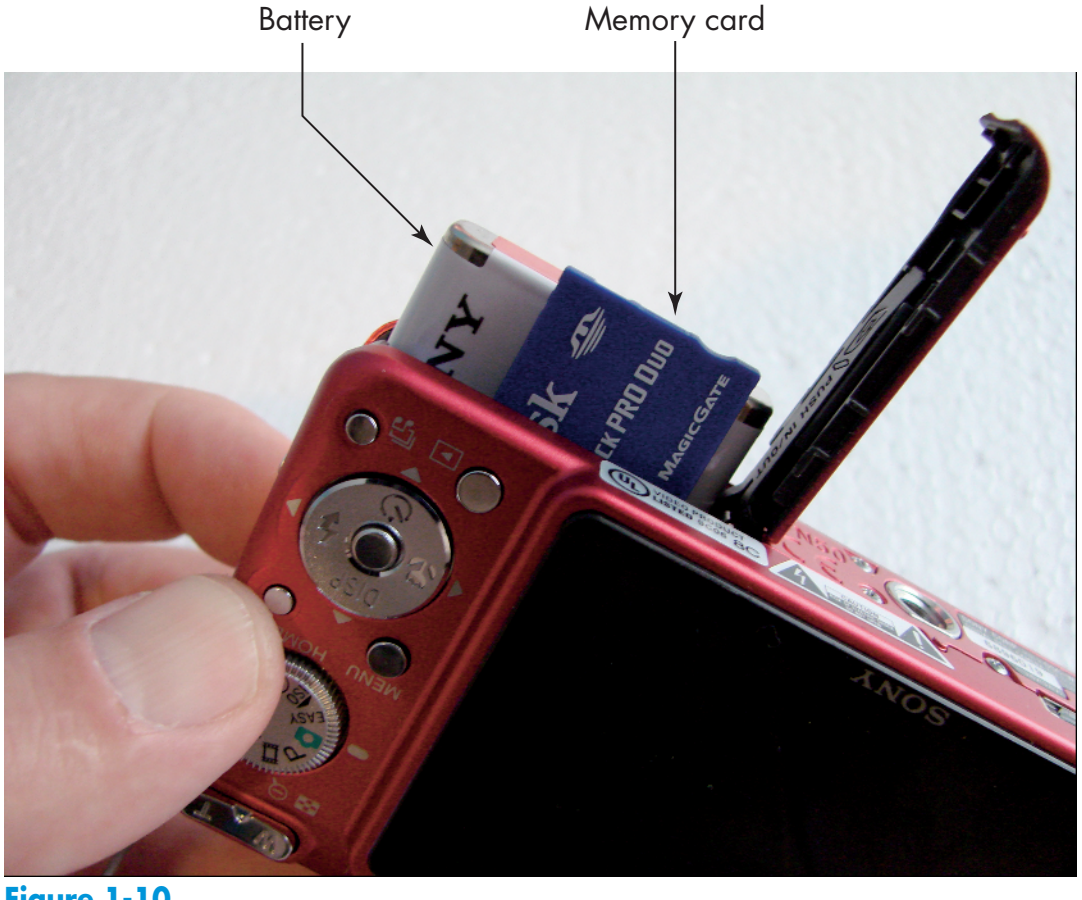

Figure 1-10

To remove a memory card, with the cover open, push the card in slightly, and when you release, it should pop out. Never pull or pry a card out.

Never install or remove a memory card while the camera is on. You could lose photos or damage the card.

5. Install the battery or batteries. Look for a small door on the bottom or side of the camera. Open the door by pushing or sliding the cover. If the battery is rectangular, put your thumb on the label and gently push it in — the battery will go in only one way. If your camera uses two or four standard batteries, look for an indication of which end goes in for each battery. (The standard batteries don't all go in the same way; they alternate.)

6. Locate the lens cover. If it's a separate piece, leave it unattached for now. If the lens cover clips in place, remove the cover before you turn on the camera. (In some camera models, when you turn on the camera, the lens will strike the lens cover if you forget to remove the cover.) If the cover slides, gently sliding it may turn the camera on. Don't force the lens cover off or on.

   Some lens caps come with a thin string you can slip through a hole in the lens cap and another hole in the camera body or around the camera strap to keep the cap with the camera.

7. Turn on the camera if moving the lens cover didn't do that automatically. Look for a message on the LCD or in the viewfinder.

   The camera may automatically ask for the current date and time, which will be recorded with each photograph. Enter that information using the up and down buttons to change numbers and use the right and left buttons to move to different parts of the date and time. These buttons are usually arranged around the outside of a circular button. After you've selected the current date and time, press the OK button.

8. Go ahead: Take a picture of anything. You know you want to.

9. If your camera came with a CD or DVD, you can install that software on a computer later. The software may include a program for viewing and editing your pictures.

Stick an address label (plus your phone number and e-mail address) onto your camera in the hope that someone will return it to you if you lose it. I also put a copy of this info in the battery compartment of my camera.