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**Julie Adair King**
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# Nikon® D7100™ FOR DUMMIES®

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by Julie Adair King

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**Nikon® D7100™ For Dummies®**

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# Contents at a Glance

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# Introduction

*Nikon.* The name has been associated with top-flight photography equipment for generations. And the introduction of the D7100 has only enriched Nikon's well-deserved reputation, offering all the control a die-hard photography enthusiast could want while at the same time providing easy-to-use, point-and-shoot features for the beginner.

In fact, the D7100 offers so *many* features that sorting them all out can be more than a little confusing, especially if you're new to digital photography, SLR photography, or both. For starters, you may not even be sure what SLR means or how it affects your picture-taking, let alone have a clue as to all the other techie terms you encounter in your camera manual — *resolution, aperture, white balance,* and so on. And if you're like many people, you may be so overwhelmed by all the controls on your camera that you haven't yet ventured beyond fully automatic picture-taking mode. Which is a shame because it's sort of like buying a Porsche and never actually taking it on the road.

Therein lies the point of *Nikon D7100 For Dummies.* Through this book, you can discover not just what each bell and whistle on your camera does, but also when, where, why, and how to put it to best use. Unlike many photography books, this one doesn't require any previous knowledge of photography or digital imaging to make sense of things, either. In classic *For Dummies* style, everything is explained in easy-to-understand language, with lots of illustrations to help clear up any confusion.

In short, what you have in your hands is the paperback version of an in-depth photography workshop tailored specifically to your Nikon picture-taking powerhouse.

## A Quick Look at What's Ahead

This book is organized into four parts, each devoted to a different aspect of using your camera. Although chapters flow in a sequence that's designed to take you from absolute beginner to experienced user, I've also tried to make each chapter as self-standing as possible so that you can explore the topics that interest you in any order you please.

Here's a brief preview of what you can find in each part of the book:

- **Part I: Fast Track to Super Snaps:** Part I contains four chapters to help you get up and running. Chapter 1 offers a tour of the external controls on your camera, shows you how to navigate camera menus, and walks you through initial camera setup. Chapter 2 explains basic picture-taking options, such as shutter-release mode and Image Quality settings, and Chapter 3 shows you how to use the camera's fully automatic exposure

modes. Chapter 4 explains the ins and outs of using Live View, the feature that lets you compose pictures on the monitor, and also covers movie recording.

- **Part II: Working with Picture Files:** This part offers two chapters dedicated to after-the-shot topics. Chapter 5 explains how to review your pictures on the camera monitor, delete unwanted images, and protect your favorites from accidental erasure. Chapter 6 offers a look at some photo software options — including Nikon ViewNX 2, which ships free with your camera — and guides you through the process of downloading pictures to your computer and preparing them for printing and online sharing.
- **Part III: Taking Creative Control:** Chapters in this part help you unleash the full power of your camera by moving into the advanced shooting modes (P, S, A, and M). Chapter 7 covers the critical topic of exposure, and Chapter 8 explains how to manipulate focus and color. Chapter 9 summarizes all the techniques explained in earlier chapters, providing a quick-reference guide to the camera settings and shooting strategies that produce the best results for portraits, action shots, landscape scenes, and close-ups.
- **Part IV: The Part of Tens:** In famous *For Dummies* tradition, the book concludes with two "top ten" lists containing additional bits of information and advice. Chapter 10 covers the photo-editing and effects tools found on the camera's Retouch menu and also shows you how to use the Effects exposure mode to add special effects to movies and photos as you record them. Chapter 11 wraps up the book by detailing some camera customization features that, although not found on most "Top Ten Reasons I Bought My Nikon D7100" lists, are nonetheless interesting, useful on occasion, or a bit of both.

## Icons and Other Stuff to Note

If this isn't your first *For Dummies* book, you may be familiar with the large, round icons that decorate its margins. If not, here's your very own icon-decoder ring:


A Tip icon flags information that will save you time, effort, money, or some other valuable resource, including your sanity. Tips also point out techniques that help you get the best results from specific camera features.


When you see this icon, look alive. It indicates a potential danger zone that can result in much wailing and teeth-gnashing if ignored. In other words, this is stuff that you really don't want to learn the hard way.


Lots of information in this book is of a technical nature — digital photography is a technical animal, after all. But if I present a detail that is useful mainly for impressing your technology-geek friends, I mark it with this icon.


I apply this icon either to introduce information that is especially worth storing in your brain's long-term memory or to remind you of a fact that may have been displaced from that memory by some other pressing fact.

Additionally, I need to point out these extra details that will help you use this book:

- **Other margin art:** Replicas of some of your camera's buttons and onscreen symbols also appear in the margins next to some paragraphs. I include these to provide a quick reminder of the appearance of the button or feature being discussed.
- **Software menu commands:** In sections that cover software, a series of words connected by an arrow indicates commands that you choose from the program menus. For example, if a step tells you to "Choose File➪Convert Files," click the File menu to unfurl it and then click the Convert Files command on the menu.
- **Online updates:** Occasionally, Wiley's technology books are updated. If this book has technical updates, they'll be posted at `www.dummies.com/go/nikond7100updates`.

## eCheat Sheet

As a little added bonus, you can find an electronic version of the famous *For Dummies* eCheat Sheet at `www.dummies.com/cheatsheet/nikond7100`. The eCheat Sheet contains a quick-reference guide to all the buttons, dials, switches, and exposure modes on your camera. Print it out, and tuck it in your camera bag for times when you don't want to carry this book with you.

## Practice, Be Patient, and Have Fun!

To wrap up this preamble, I want to stress that if you initially think that digital photography is too confusing or too technical for you, you're in very good company. *Everyone* finds this stuff a little mind-boggling at first. So take it slowly, experimenting with just one or two new camera settings or techniques at first. Then, each time you go on a photo outing, make it a point to add one or two more shooting skills to your repertoire.

I know that it's hard to believe when you're just starting out, but it really won't be long before everything starts to come together. With some time, patience, and practice, you'll soon wield your camera like a pro, dialing in the necessary settings to capture your creative vision almost instinctively.

So without further ado, I invite you to grab your camera, a cup of whatever it is you prefer to sip while you read, and start exploring the rest of this book. Your D7100 is the perfect partner for your photographic journey, and I thank you for allowing me, through this book, to serve as your tour guide.

# Part I

# Fast Track to Super Snaps


web extras

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## In this part . . .

- Get familiar with the basics of using your camera, from attaching lenses to using the Information display and Control panel.
- Find out how to select the shutter-release mode, exposure mode, picture resolution, file type (JPEG or Raw), and image area.
- Discover tips for getting good results in the automatic exposure modes.
- Start taking creative control by stepping up to Scene modes.
- Switch to Live View mode to compose pictures by using the monitor.
- Record, play, and trim digital movies.

# 1

# Getting the Lay of the Land

### In This Chapter

- Attaching and using an SLR lens
- Adjusting the viewfinder to your eyesight
- Selecting from menus
- Figuring out the displays
- Working with memory cards
- Getting acquainted with your camera
- Customizing basic operations

If you're like me, shooting for the first time with a camera as sophisticated as the Nikon D7100 produces a blend of excitement and anxiety. On one hand, you can't wait to start using your new equipment, but on the other, you're a little intimidated by all its buttons, dials, and menu options.

Well, fear not: This chapter provides the information you need to start getting comfortable with your D7100. Along with an introduction to the camera's external controls, I offer details about working with lenses and memory cards, viewing and adjusting camera settings, and choosing basic camera setup options.

## Looking at Lenses

One of the biggest differences between a digital point-and-shoot camera and a dSLR *(digital single-lens reflex)* camera is the lens. With a dSLR, you can change lenses to suit different photographic needs, going from an extreme close-up lens to a super-long telephoto, for example. In addition, a dSLR lens has a focusing ring that gives you the option of focusing manually instead of relying on the camera's autofocus mechanism.

I don't have room in this book to go into detail about the science of lenses, nor do I think that an in-depth knowledge of the subject is terribly important to your photographic success. But the next few sections offer advice that may help when you're shopping for lenses, figuring out whether the lenses you inherited from Uncle Ted or found on eBay will work with your D7100, and taking the steps involved in actually mounting and using a lens.

## Choosing a lens

To decide which lens is the best partner for your camera, start by considering these factors:

- **Lens compatibility:** You can mount a wide range of lenses on your D7100, but some lenses aren't fully compatible with all camera features. For example, with some lenses, you can't take advantage of autofocusing and must focus manually.

  Your camera manual lists all the lens types that can be mounted on the camera and explains what features are supported with each type. For maximum compatibility, look for these types: Type D or G AF Nikkor, AF-S Nikkor, or AF-I Nikkor. (The latter is an older, expensive professional lens that is no longer sold but might be available on the resale market.)

  All the aforementioned lens types (as well as some others) offer CPU (central processing unit) technology, which allows the lens to talk to the camera. This feature is critical to getting maximum performance from the autofocusing system, exposure metering system, and so on. That's not to say that you can't use a non-CPU lens; you just lose access to some camera features.

  Information in this book assumes that you're using a CPU lens that supports all the camera's functions. If your lens doesn't meet that criteria, check the camera manual for specifics on what features are unavailable or need to be implemented differently.

- **Focal length and the crop factor:** The focal length of a lens, stated in millimeters, determines the angle of view that the camera can capture and the spatial relationship of objects in the frame. Focal length also affects *depth of field,* or the distance over which focus appears acceptably sharp.

  You can loosely categorize lenses by focal length as follows:

  - *Wide-angle:* Lenses with short focal lengths — generally, anything under 35mm — are known as *wide-angle lenses.* A wide-angle lens has the visual effect of pushing the subject away from you and making it appear smaller. As a result, you can fit more of the scene into the frame without moving back. Additionally, a wide-angle lens has a large depth of field, which means that both the subject and background objects appear sharp. These characteristics make wide-angle lenses ideal for landscape photography.

- *Telephoto:* Lenses with focal lengths longer than about 70mm are *telephoto* lenses. These lenses create the illusion of bringing the subject closer to you, increase the subject's size in the frame, and produce a short depth of field so that the subject is sharply focused but distant objects are blurry. Telephoto lenses are great for capturing wildlife and other subjects that don't permit up-close shooting.
- *Normal:* A focal length in the neighborhood of 35mm to 70mm is considered "normal" — that is, somewhere between a wide-angle and telephoto. This focal length produces the angle of view and depth of field that are appropriate for the kinds of snapshots that most people take.

Figure 1-1 offers an illustration of the difference that focal length makes, showing the same scene captured at 42mm (left image) and 112mm (right image). Of course, the illustration shows just two of countless possibilities, and the question of which focal length best captures a scene depends on your creative goals.


**Figure 1-1:** I used a focal length of 42mm to capture the first image and then zoomed to a focal length of 112mm to capture the second one.


Note, however, that the focal lengths stated here and elsewhere in the book are so-called *35mm equivalent* focal lengths. Here's the deal: For reasons that aren't really important, when you put a standard lens on most digital cameras, including your D7100, the available frame area is reduced, as if you took a picture on a camera that uses 35mm film negatives and then cropped it.

This so-called *crop factor* varies depending on the camera, which is why the photo industry adopted the 35mm-equivalent measuring stick as a standard. With the D7100, the crop factor is 1.5. So the 18–105mm kit lens, for example, captures the approximate area you would get from a 27–158mm lens on a 35mm film camera. (Multiply the crop factor by the lens focal length to get the actual angle of view.) In Figure 1-2, the red line indicates the image area that results from the 1.5 crop

factor compared with the shot you would get from the same focal length lens mounted on a 35mm film camera.

When shopping for a lens, it's important to remember this crop factor to make sure that you get the focal length designed for the type of pictures you want to take.

**Figure 1-2:** The 1.5 crop factor produces the angle of view indicated by the red outline.


Not sure which focal length to choose? Here's a really cool online tool to help you understand the subject more: Point your web browser to `http://imaging.nikon.com`, click the link for Nikkor lenses, and then click the link for the Nikkor Lenses Simulator. Using this interactive tool, you can see exactly how different lenses capture the same scene.

- **Prime versus zoom lenses:** A *prime* lens is a single focal-length lens. With a zoom lens, you get a range of focal lengths in one unit. For example, the kit lens I feature in this book has a focal-length range of 18–105mm.

  Why select a lens that offers a single focal length when a zoom lens offers a range of focal lengths? In a word, quality. Because of some lens science I won't bore you with, you typically see some reduction in picture quality at certain points in the range of a zoom lens. On the flip side, a zoom lens is certainly more convenient than carting around a bag of prime lenses with different focal lengths. And you can get exceptional image quality from many zoom lenses, even with some *super zooms,* which offer a huge range of focal lengths.

- **Aperture range:** The *aperture* is an adjustable diaphragm in a lens. By adjusting the aperture size, you control the amount of light that enters through the lens and strikes the image sensor, thereby controlling exposure. The aperture setting also affects depth of field: A wide-open aperture produces a short depth of field, so the subject is sharply focused, but distant objects appear blurry; a narrow aperture produces a long depth of field so that both the subject and distant objects appear sharp.

  Chapters 7 and 8 cover these issues in detail. For the purposes of lens shopping, you need to know just a few things.

- *Every lens has a specific range of aperture settings.* Obviously, the larger that range, the more control you have over exposure and depth of field.
- *The larger the maximum aperture, the "faster" the lens.* Aperture settings are stated in *f-stops,* with a lower number meaning a larger aperture. For example, a setting of f/2 results in a more open aperture than f/4. And if you have one lens with a maximum aperture of f/2 and another with a maximum aperture of f/4, the f/2 lens is said to be *faster* because you can open the aperture wider, thereby allowing more light into the camera and permitting the image to be captured in less time. This not only benefits you in low-light situations but also when photographing action, which requires a fast shutter speed (short exposure time). So, all other things being equal, a faster lens is better.
- *With some zoom lenses, the maximum and minimum aperture change as you zoom the lens.* For example, when you zoom to a telephoto focal length, the maximum aperture generally gets smaller — that is, you can't open the aperture as much as you can at a wide-angle setting. You can buy lenses that maintain the same maximum and minimum aperture throughout the whole zoom lens, but you pay more for this feature.

After studying these issues and narrowing down your choices, finding the right lens in the category you want is just a matter of doing some homework. Study lens reviews in photography magazines and online photography sites to find the best performing lens in your price range.

## Attaching and removing lenses

Whatever lens you choose, follow these steps to attach it to the camera body:

1. **Turn off the camera.**
2. **Remove the cap that covers the lens mount on the front of the camera.**
3. **Remove the cap that covers the back of the lens.**
4. **Hold the lens in front of the camera so that the mounting index on the lens aligns with the one on the camera.**

   The *mounting index* is a marker found on both the lens and the camera body to indicate how to align the two when mounting the lens. On the D7100, the mounting index is the white dot labeled in Figure 1-3.

   On the 18–105mm lens that's available in a bundle with the D7100 body, the lens mounting index is also a white dot, as shown in the figure. If you buy a different lens, your mounting index may look different, so check the lens instruction manual.

5. **Keeping the index markers aligned, position the lens on the camera's lens mount.**
6. **Turn the lens in a counterclockwise direction until the lens clicks into place.**

   To put it another way, turn the lens toward the side of the camera that sports the shutter button, as indicated by the arrow in Figure 1-3.
7. **On a CPU lens that has an aperture ring, set and lock the ring so the aperture is set at the highest f-stop number.**

   Check your lens manual to find out whether your lens sports an aperture ring and how to adjust it. (The lens featured in this book doesn't have an aperture ring.)


**Figure 1-3:** When attaching the lens, align the index dots as shown here.

To detach a lens, take these steps:

1. **Turn off the camera and locate the lens-release button, labeled in Figure 1-3.**
2. **Press the lens-release button while turning the lens clockwise (away from the shutter button) until the mounting index on the lens is aligned with the index on the camera body.**

   When the mounting indexes line up, the lens detaches from the mount.
3. **Place the rear protective cap onto the back of the lens.**

   If you aren't putting another lens on the camera, cover the lens mount with the protective cap that came with your camera, too.


Always change lenses in a clean environment to reduce the risk of getting dust, dirt, and other contaminants inside the camera or lens. For added safety, point the camera slightly down when performing this maneuver to help prevent any flotsam in the air from being drawn into the camera by gravity.

## Changing the focusing method (auto or manual)

Assuming that your lens supports autofocusing when mounted on the D7100, familiarize yourself with these two controls, which set the focusing method to manual or autofocusing:

- **Lens focus-mode switch:** Assuming that your lens offers autofocusing as well as manual focusing, it has a switch that you use to choose between the two options. On the 18–105mm kit lens shown in Figure 1-4, the switch has an M setting for Manual focus and an A setting for Autofocus. Other lenses may offer different switches, so check your lens instruction guide for specifics.
- **Focus-mode selector:** Also shown in Figure 1-4, this switch sets the camera itself to manual focusing (M) or autofocusing (AF).


**Figure 1-4:** Set the focus mode both on the camera body and the lens.

Chapter 8 details how to take best advantage of the camera's autofocusing system. Manual focusing is fairly simple: Just rotate the focus ring on the lens to bring your subject into focus. The placement and appearance of the focus ring depend on the lens; Figure 1-5 shows you the one on the 18–105mm kit lens.

## Zooming in and out

If you bought a zoom lens, it has a movable zoom ring. The location of the zoom ring on the 18–105mm kit lens is shown in Figure 1-5. To zoom in or out, just rotate that ring.


The numbers at the edge of the zoom ring, by the way, represent focal lengths. The number that's aligned with the white bar at the edge of the zoom ring represents the current focal length. In Figure 1-5, for example, the focal length is 35mm.


**Figure 1-5:** On the 18–105mm kit lens, the manual-focusing ring is set near the back of the lens.

## Getting shake-free shots with Vibration Reduction (VR) lenses

Some Nikon lenses offer *Vibration Reduction.* This feature, indicated by the initials VR in the lens name, attempts to compensate for small amounts of camera shake that are common when photographers handhold their cameras and use a slow shutter speed, a lens with a long focal length, or both. That camera movement during the exposure can produce blurry images. Although Vibration Reduction can't work miracles, it enables most people to capture sharper handheld shots in many situations than they otherwise could. On the 18–105mm lens featured in this book, you enable and disable Vibration Reduction via the VR switch, labeled in Figure 1-6.

Here's what you need to know about this feature:

- **For handheld shooting, turn on Vibration Reduction.** Vibration Reduction engages when you press the shutter button halfway and after you press the button all the way to take the picture. The image in the viewfinder may appear a little blurry right after you take the picture. That's normal and doesn't indicate a problem with your camera or focus.


- **With the 18–105mm kit lens, turn off Vibration Reduction when you mount the camera on a tripod.** When you use a tripod, Vibration Reduction can have detrimental effects because the system may try to adjust for movement that isn't occurring. This recommendation assumes that the tripod is "locked down" so that the camera is immovable.

  You don't need to disable Vibration Reduction when you want to create motion effects by panning the camera, however. (*Panning* means to move the camera horizontally or vertically as you take the shot, a technique that blurs the background while keeping the subject sharply focused, creating a heightened sense of motion.) The Vibration Reduction system is smart enough to ignore panning movement and compensate only for movement in other directions.

- **For other lenses, check the lens manual to find out whether your lens offers a similar feature.** On non-Nikon lenses, Vibration Reduction may go by another name: *image stabilization, optical stabilization, anti-shake, vibration compensation,* and so on. In some cases, the manufacturers may recommend that you leave the system turned on or select a special setting when you use a tripod or pan the camera.


**Figure 1-6:** Turn on Vibration Reduction for sharper handheld shots, but turn off the feature when you use a tripod.

Additionally, some lenses enable you to engage different types of stabilization (the settings may be called Active/Normal or something similar); again, refer to the lens manual for specifics.


## Enabling automatic distortion correction

Pictures taken with wide-angle lenses often exhibit *barrel distortion,* which causes straight lines to bow outward. And telephoto lenses sometimes cause verticals to bow inward, creating *pincushion distortion.* The Auto Distortion Control feature on the Shooting menu attempts to correct both problems.

The option is turned off by default. Before enabling it, understand that some of the area you see in your viewfinder may not be visible in the final photo because the anti-distortion manipulation requires some cropping of the scene. Also note that the feature is unavailable for movies and works only with certain types of lenses. (See the camera manual for specifics.)

Because results depend on your lens, take test shots to decide whether the feature is right for your equipment. Keep in mind that you have the option of applying a similar correction after the shot, using the Distortion Control option on the Retouch menu.

# Adjusting the Viewfinder Focus

Near the upper-right side of the viewfinder is a dial that enables you to adjust the viewfinder focus to accommodate your eyesight. Figure 1-7 offers a close-up look at the dial, which is officially known as the *diopter adjustment control.*


**Figure 1-7:** Rotate this dial to adjust the viewfinder focus to your eyesight.


If you don't take this step, scenes that appear out of focus through the viewfinder may actually be focused through the lens, and vice versa. Here's how to make the necessary adjustment:

1. **Remove the lens cap from the front of the lens.**
2. **Look through the viewfinder and press the shutter button halfway to display picture data at the bottom of the viewfinder.**

   In dim lighting, the built-in flash may pop up; ignore it for now and close the unit after you finish adjusting the viewfinder.

3. **Rotate the diopter adjustment dial until the viewfinder data appears sharpest to your eye.**

   As you rotate the dial, the bracket-like marks in the center of the viewfinder, which are related to autofocusing, also become more or less sharp.


The Nikon manual warns you not to poke yourself in the eye as you perform this maneuver. This warning seems so obvious that I laugh every time I read it — which makes me feel doubly stupid the next time I poke myself in the eye as I perform this maneuver.

## Ordering from Camera Menus

You access many camera features via menus, which, conveniently enough, appear when you press the Menu button. Features are grouped into six main menus, described briefly in Table 1-1.

**Table 1-1 D7100 Menus**

| *Symbol* | *Open This Menu* | *Access These Functions* |
|---|---|---|
|  | Playback | Viewing, deleting, and protecting pictures |
|  | Shooting | Basic photography settings |
|  | Custom Setting | Advanced photography options and some basic camera options |
|  | Setup | Additional basic camera options |
|  | Retouch | Built-in photo retouching options |
|  | My Menu/Recent Settings | Your custom menu or 20 most recently used menu options |

After you press the Menu button, you see a screen similar to the one shown in Figure 1-8. The left side of the screen sports the icons shown in Table 1-1, each representing one of the available menus. The highlighted icon is the active menu; options on that menu automatically appear to the right. In the figure, the Shooting menu is active, for example.

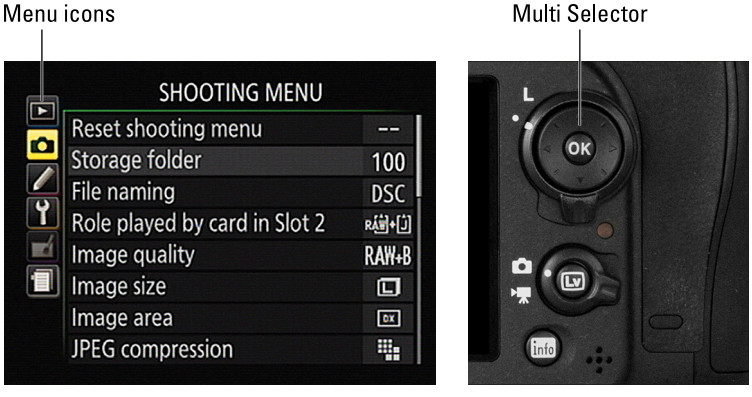


**Figure 1-8:** Use the Multi Selector to navigate menus.

The Multi Selector, labeled in the figure, is the key to the navigating menus. Press the edges of the Multi Selector to navigate up, down, left, and right through the menus.


In this book, the instruction "Press the Multi Selector left" means to press the left edge of the control. "Press the Multi Selector right" means to press the right edge, and so on.

Here's a bit more detail about menus:

- **Select a menu.** Press the Multi Selector left to jump to the column containing the menu icons. Then press up or down to highlight the menu you want to display. Finally, press right to jump over to the options on the menu.
- **Select and adjust a function on the current menu.** Use the Multi Selector to scroll up or down the list of options to highlight the feature you want to adjust and then press the OK button at the center of the Multi Selector. Settings available for the selected item then appear. For example, if you select Image Quality from the Shooting menu, as shown on the left in Figure 1-9, and press OK, the available Image Quality options appear, as shown on the right. Repeat the old up-and-down scroll routine until the choice you prefer is highlighted. Then press OK to return to the previous screen.

  In some cases, you may see a right-pointing triangle instead of OK next to an option. That's your cue to press the Multi Selector right to display a submenu or other list of options.