

**Making Everything Easier!™**

**6th Edition**

# **Digital Photography** **FOR** **DUMMIES®**

## **Learn to:**

- Get the best pictures from your digital camera every time
- Solve common problems like poorly exposed photos and red-eye
- Download, organize, print, and share your photos

**IN FULL COLOR!**

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# Digital Photography FOR DUMMIES 6th Edition

Cheat  
Sheet

## Exposure Modes

Most cameras use symbols similar to these to indicate available exposure modes.

| What It Looks Like  | What It Does  |
|---|---|
| <br>AUTO | Automatic mode; camera selects exposure settings appropriate for most subjects        |
| M   | Manual exposure mode; user sets aperture (f-stop) and shutter speed                   |
| A or Av   | Aperture-priority autoexposure; user controls aperture, camera sets shutter speed     |
| S or Tv   | Shutter-priority autoexposure; user controls shutter speed, camera sets aperture      |
|          | Portrait scene mode; automatically chooses settings most appropriate for portraits    |
|         | Action scene mode; automatically chooses settings designed to capture moving subjects |
|        | Landscape scene mode; chooses settings appropriate for landscape photography          |
|        | Macro mode; chooses settings appropriate for close-up shots                           |

## File Format Guide

Rely on these popular file formats when creating and saving digital images.

| Format     | Description  |
|------------|--|
| Camera Raw | A format offered by some digital cameras. Stores raw, "uncooked" data from the image sensor, without applying normal adjustments to sharpness, color, and exposure. Gives photographers ultimate control over images and editing flexibility, but files must be converted to a standard format before sharing online, printing, or viewing in most photo programs. |
| JPEG       | The most popular digital photography image format. JPEG compresses images to make files significantly smaller, but too much compression reduces image quality. Used for print, the Web, and e-mail.  |
| TIFF       | The leading format for files that will be used in print publications such as newsletters and magazines. Preserves all image data but usually results in larger file sizes than JPEG and can't be displayed by Web browsers and e-mail programs. The best format for storing converted RAW files and for edited JPEG files.   |

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Unfortunately, it's tough to evaluate a camera's optical quality; it's not something you can judge just by playing around with a few models in the store. So again, your best bet is to study reviews in camera magazines and at online photography sites, where optics are tested according to rigorous technical standards.

- ✓ **Focal length:** 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 remains sharp.

You can loosely categorize lenses according to the following focal length groups:

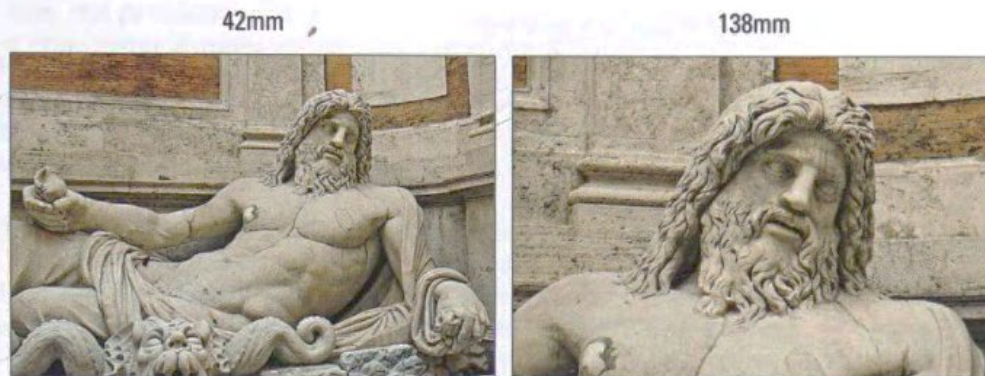
- **Wide-angle:** Lenses with short focal lengths — generally, anything under 35mm — are known as *wide-angle lenses*. A wide-angle lens has the visual effect of pushing the subject away from you and making it appear smaller. As a result, you can fit more of the scene into the frame without moving back. Additionally, a wide-angle lens has a large depth of field so that the zone of sharp focus extends a greater distance. All these characteristics make wide-angle lenses ideal for landscape photography.
- **Telephoto:** Lenses with focal lengths longer than about 70mm are called *telephoto* lenses. These lenses seem to bring 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. They're 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 1-5 offers an illustration of the difference that focal length makes, showing the same scene captured at 42mm and 138mm. Of course, the illustration shows you just two of countless possibilities, and the question of which focal length best captures a scene depends on your creative goals. So you may want to visit a camera store, where you usually can find brochures that illustrate the types of shots you can capture at specific focal lengths. Then just think about the subjects you usually shoot and match the lens focal length to your needs.

Also, check out Chapter 6 for a further explanation of how you can manipulate depth of field to achieve different creative results.

- ✓ **Zoom power:** With a zoom lens, you get a range of focal lengths in one unit. For example, a lens might zoom from 18mm to 55mm. Do note that with a lens that offers a really large focal range — say, 18 to 200 — you tend to see some quality drop-off at certain points in the range. (Here again, camera magazines routinely measure this type of thing.)





**Figure 1-5:** A short focal length captures a wide angle of view (left); a long focal length brings the subject closer (right).



When testing a point-and-shoot camera, make sure that the button or knob you use to manipulate the zoom is conveniently positioned and easy to use. On a digital SLR, you zoom by twisting the lens barrel, so this isn't an issue. However, you do want to watch out for so-called *lens creep*: Some SLR zooms have a tendency to slide from one focal length to another, without any input from you, when you tilt the camera.

- ✓ **Optical versus digital zoom:** For zoom lenses on point-and-shoot cameras, another important factor to note is whether the lens offers an *optical* or *digital* zoom. An *optical zoom* is a true zoom lens and produces the best picture quality. *Digital zoom* is a software feature that simply crops and enlarges your image, just as you might do in a photo-editing program. Because you're then left with fewer original image pixels, the result is typically a reduction in image quality.

You don't have to disregard cameras that have digital zoom; just don't think that it's a benefit to your photography. And if the camera offers both an optical and digital zoom, find out whether you can disable the digital part. Some cameras automatically shift into digital zoom mode when you reach the end of the optical zoom range and don't alert you to that change.

### *Photo-enthusiast features*

Today's digital cameras offer fully automatic everything, so you really can just "point and shoot." But if you're a photography enthusiast or ready to move out of automatic mode, look for advanced features that enable you to take more control over exposure, color, and other picture characteristics. You can explore some of these features in the next few sections.



If your camera offers several resolution settings, do the compression test for each resolution setting. **Remember:** Resolution and compression work together to determine image quality. You usually get away with more compression at a higher resolution. Low resolution combined with heavy compression yields results even a mother couldn't love.



When you edit your images in a photo editor, you can save your altered file in the JPEG format. If you do, though, you apply another round of lossy compression. Each pass through the JPEG compression machine does further damage, and if you edit and save to the JPEG repeatedly, you *can* wind up with the level of artifacting shown in Figure 4-15. So you should instead save works-in-progress in a format such as TIFF (explained later in this chapter), which does a much better job of preserving picture quality. Should you want to share your edited photo online — which requires a JPEG image — you can create a copy of your final TIFF image and save the copy in the JPEG format. Chapter 11 shows you how.

## Camera Raw

When you shoot in the JPEG format, your camera takes the data collected by the image sensor and then applies certain enhancements — exposure correction, color adjustments, sharpening, and so on — before recording the final image. These changes are based on the picture characteristics that the manufacturer believes its customers prefer.

The Camera Raw format, sometimes called simply *Raw*, was developed for photo purists who don't want the camera manufacturer to make those decisions. Camera Raw records data straight from the sensor, without applying any post-capture processes. After transferring the files to a computer, you then use special software known as a *raw converter* to translate the sensor data into the actual photograph.



Unlike JPEG, Camera Raw is not a standardized format. Each manufacturer uses different data specifications and names for its Raw format. Nikon Raw files are called NEF files, for example, while Canon's versions go by the name CRW or CR2, depending on the camera model.

Whatever the specific name, Raw image capture offers the following advantages:

- ✓ **No risk of JPEG compression artifacts.** Unlike JPEG files, Raw files don't undergo lossy compression. That means that when you "shoot Raw," you don't have to worry about the quality loss that can sometimes occur with JPEG compression. Again, though, as long as you stick with your camera's highest-quality JPEG setting, you may have difficulty detecting much difference in quality between the JPEG and Raw version of an image unless you greatly enlarge the photo.



- ✓ **Greater creative control.** When you process your “uncooked” picture data in a raw converter, you can specify characteristics such as brightness, color saturation, sharpness, and so on, instead of dining on whatever the JPEG version might serve up. To keep up the cooking analogy, imagine that you put together a special dish and you realize after it comes out of the oven that you accidentally used cayenne pepper when your recipe didn’t call for any. If your dish were like a Raw file, you’d be able to go back to the beginning of your cooking session and remove the pepper. With JPEG, that pepper would be a done deal. And that’s what photographers like about Raw — files captured in this format give you much more control over the final look of your images.
- ✓ **Greater latitude for editing the picture.** Raw capture also gives you a bit of a photographic safety net. Suppose that you don’t get the exposure settings quite right, for example, when you shoot a picture. With JPEG, the camera decides how brightly to render the shadows and highlights, which can limit you in how much you can retouch that aspect of your picture later. With Raw, you can specify what brightness value should be white, what should be black, and so forth, giving you greater ability to achieve just the image brightness and contrast you want — a benefit that’s especially great for pictures taken in tricky light.
- ✓ **Higher bit depth.** Raw files typically have a *greater bit depth* than JPEG files. The sidebar “A bit about bit depth” (earlier in the chapter) explains this concept in detail, but the short story is that the more bits you have, the more color and tonal information the image can contain. Of course, whether or not you will be able to spot any difference depends on the subject matter. But again, starting with a higher bit depth can give you an added level of flexibility if you decide to edit the photo.

Of course, like most things in life, the benefits of Raw do come at a price. First, most low-priced cameras don’t offer the format. But Raw also costs you in the following ways, which may be enough for you to stick with JPEG even if your camera is dual-natured in terms of file format:

- ✓ **Raw files require some post-capture computer time.** You can’t take a Raw image straight from the camera and share it online, add it to a text document, use it in a PowerPoint presentation, retouch it in a photo editor, or, well, do much of *anything* with it until you process it in a Raw converter. Some photo programs provide a tool that handles this conversion in the background, requiring little input from you, but if you want to enjoy the added control that shooting Raw gives you, you need to use a converter that enables you to specify all the critical image characteristics: color, sharpness, contrast, and so on, and that takes time. Either way, after the conversion, you save a copy of the processed Raw file in a standard file format, such as TIFF (explained in the next section).



# Make the most of your digital camera! Learn to get better shots and share them

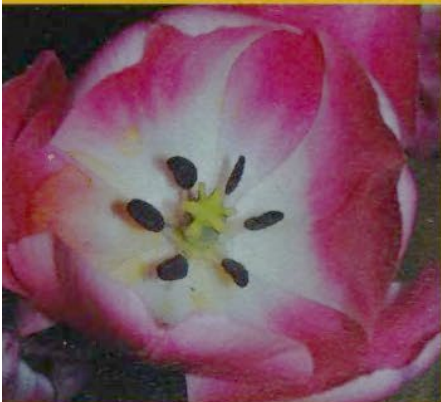
So you got a digital camera, and now you're hip-deep in images and not quite sure what to do with them. Or how to make them better. Relax — Dummies to the rescue! Here's the jargon-free guide to upgrading your equipment, working with focus and exposure, shooting like a pro, organizing and enhancing your images, and sharing them as prints or online.

- **Choose well** — decide if your camera needs updating and what equipment and software you need for the way you take pictures
- **Get set** — set up your camera for basic shooting and learn to use automatic mode and common scene modes
- **Know the lingo** — find easy-to-understand explanations of all the digital photography terms and acronyms that baffle you
- **Gain confidence to take control** — learn to manage depth of field, exposure, focus, and color with advanced camera controls
- **Manage your images** — easily transfer your pictures to a computer and safeguard your digital memories from harm




Open the book and find:

- How to select the right picture resolution
- Pro techniques for capturing great portraits and action shots
- Help with using flash and dealing with tricky lighting
- Simple photo-editing tricks to solve common picture problems
- The lowdown on the Camera Raw and JPEG file formats
- Tips for better photo composition



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