

PHOTOGRAPHY CONCEPTS

BOOK NOTES

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How to Do Everything Digital Camera

McGraw Hill Professional; 5th Ed.

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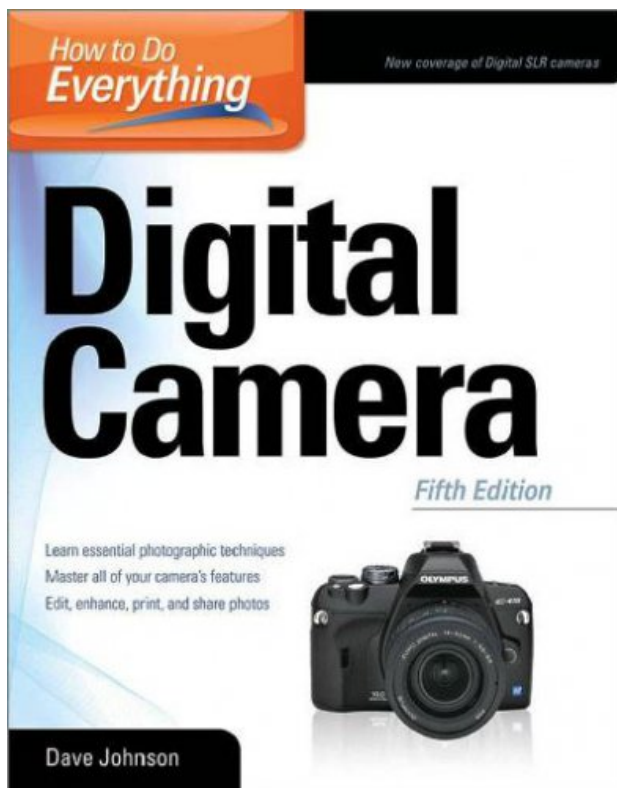
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Digital cameras.

Language: English



Review your Manual

1 First, what *type* of camera do you use? A digicam (point-and-shoot), a digital SLR, a cellular camera phone, or some other kind of digital camera?

2 Which features does your camera offer?

___ Color LCD screen

___ Playback zoom (the ability to use the LCD screen for zooming in for enlargement/detail views)

___ The ability to display and change camera settings on the LCD screen

___ The ability to display histograms on the LCD screen

___ Tripod mount (to attach the camera to a tripod)

___ Focus lock (for recomposing scenes after locking focus on a subject)

___ Aperture priority (the ability to set an aperture of your choosing)

___ Shutter priority (the ability to set shutter speed of your choosing)

___ The ability to control ISO *

- _____ Spot-meter mode and exposure lock
 - _____ Exposure compensation
 - _____ Bulb setting and self-timer or remote control
 - _____ The ability to shoot in JPEG, TIFF, or raw formats
 - _____ Compact flash card, SmartMedia, xD-Picture Card, Memory Stick, or another storage format
 - _____ Zoom lens (or interchangeable lenses for SLR users)
 - _____ Digital zoom as well as optical zoom (for non-SLR users)
 - _____ Macro mode or macro lens Lens threads to allow the use of filters
 - _____ The ability to control white-balance settings
 - _____ EXIF data recording
 - _____ The ability to view EXIF data via the camera
 - _____ Black-and-white, sepia, and/or infrared modes
 - _____ Hot shoe for external flash
 - _____ PC port for studio lighting sync cord
 - _____ Mirror lock-up (for SLR users)**
- 3 What is the maximum resolution (pixel dimension), and what, if any, are your pixel resolution options (e.g., Large, Medium, Small)?
- 4 What are the quality-setting options for JPEG capture (e.g., SHQ, HQ, S1, S2, Fine, Normal, Standard)?

Lab Notes:

You will be required to partner with someone. Labs are not expected to be done alone, but can be. Help each other. You will be required to do an Out Lab once a week and your In Lab for the same week can not be completed if you fail to do your Out Lab. Due Dates will be posted on the calendar.

Book Notes Part I

What is a megapixel? How are megapixels important to a digital camera and its user?

2megapixel	4x6
3-6megapixel	8x10
6megapixel	cropped 8x10, 11x14

_____ and _____ are two different kinds of image sensors found in popular digital cameras. --CCD and CMOS- Charge Coupled Device and Complementary Metal Oxide Semiconductor.

Many photographers know that 20–35mm is considered wide angle, while 50–90mm is thought to be “normal”—great, for portraits, for instance. Anything over 100mm is thought to be “telephoto,” good for pulling in distant scenes. 200mm or more is considered a powerful telephoto.

In general, the greater the zoom, the better. You’ll commonly see 2x, 3x, and perhaps even 5x zooms on digital cameras. With some simple finger pressure, you can use your camera to go from a normal or wide-angle view to telephoto. The effect of a 4x zoom is apparent in Figure 1-6, taken at both ends of a camera’s zoom range.

Beware, though, of a camera’s *digital zoom*. While optical zooms move the lenses around to actually magnify the image, a digital zoom simply grabs a block of pixels in the middle of the scene and processes them to make the image look bigger. Since the result is grainy and blurry, I suggest that you ignore digital zoom ratings when evaluating a camera and just look at the optical zoom ratings.

Secure Digital- SD card.

Flash

Almost all digital cameras come with a built-in flash. The real issue is how well the flash works. Check to see what the maximum range of the flash is and if it works when the camera is in macro, or close focus, mode. You might also want a flash with special features like these:

- **Red eye reduction** This mode preflashes the subject to try to minimize reflected light from the pupil known as *red eye*.

- **Force/fill** Force or fill flash reduces shadows outdoors or in otherwise adequate lighting when the flash might not fire.
- **Rear curtain flash** This mode fires at the end of a long exposure. It comes in handy at night so that light trails precede the main subject, illuminated by the flash. Some cameras also come with sync ports or hot shoes that allow you to connect more powerful, external flash units.

most digital cameras use a USB cable to transfer images to the computer. USB is a common, standard cable that connects most external gadgets to computers. But some cameras

include even more convenient solutions, like docking stations that “sync” the pictures as soon as you place the camera on the desk.

If you like to view your freshly shot images on a television or want to record them, slide show style, directly to a VCR, then you should definitely consider a camera with a video-out port. Using an ordinary RCA-style composite video cable, you can connect the camera to a TV, VCR, or some other video display unit.

Most digital cameras have two distinct viewfinders—an optical one and a digital one. In most cases, the optical viewfinder is composed of a lens that shows you your subject directly—it’s just a plain window that lets you see through the camera to the other side. The digital viewfinder is a large LCD display that reproduces what the camera’s image sensor is actually seeing.

Which one should you use? Whichever one you like. You’ll get better results, though, if you understand the difference between the two. With a majority of cameras, you do not actually see exactly what the camera sees when you look through the optical viewfinder.

Here’s why: When taking pictures from a distance, the optical viewfinder and lens see essentially the same thing. Close up to your subject, though, they clearly see two different things (as you can see from Figure 1-8).

The digital viewfinder, on the other hand, shows you exactly what the camera sees, and thus is the most accurate gauge of your potential photograph. You won’t want to use your digital viewfinder all the time, though. For starters, it uses a lot of power, and you can get more mileage out of your camera’s batteries by using the optical viewfinder instead. In addition, the LCD display can be very difficult to see in certain lighting conditions, like outside in midafternoon.

Don't leave home without an extra _____ and plenty of extra _____ when shooting digital photos.-- battery, memory

Do most digital cameras have internal memory? What is internal memory?

Yes. Memory that cannot be removed from the camera by the user and is designated mostly for storing the camera's automated computer functions.

Digital cameras typically feature two distinct control systems: on-body buttons and dials, plus onscreen menus. Figure 1-10 shows some body controls, such as a diopter dial (for adjusting the eyepiece to your personal eyesight), shutter release button, and zoom controls. The onscreen menu (seen in Figure 1-11) is commonly used to adjust less frequently used controls

In 1998, what would a 2 megapixel camera cost the consumer to purchase? And what would the consumer get with his purchase?

What becomes exposed when you interchange a lens on a camera body? What is a body cap?

Image sensor. A screw cap that protects the image sensor from dust.

What is the biggest advantage of an SLR over a point-and-shoot? What is the biggest advantage of a point-and-shoot over a SLR?

Lens What it's Good For

12–24mm Very wide angle photography. Good for tight corners indoors, capturing lots of people in a crowded room, and special effects in which the photo's perspective is a little skewed, since 12mm is so wide that it looks a bit unnatural.

18–200mm Several manufacturers sell an 18–200mm lens now, and it's possibly the most perfect walking-around lens ever made. It covers all the most common focal lengths you need day-to-day and while on vacation, so it could easily be the only lens you own.

100mm macro If you like macro photography, a macro lens in the 100mm range is ideal for a lot of common close-ups, and it's long enough to get small insects like bees

and butterflies without getting so close that you bother them. When you're not shooting close-ups, this lens is a handy short telephoto.

80–400mm Granted, this is a massive zoom, but I've used it for years to pull in distant wildlife as if it were in my backyard. If you do wildlife or sports photography, you'll want a big zoom that goes well beyond 200mm.

What causes the large price variation in a lens? How wide an aperture can open.

Why is a blower important to photographers? Helps to remove dust particles from lenses.

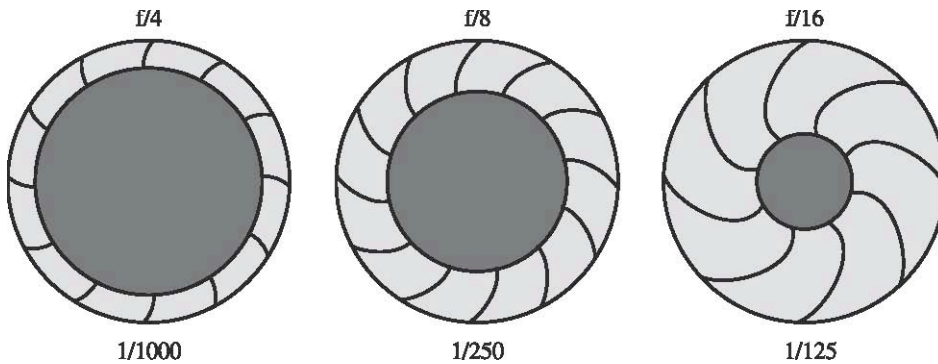
I do not recommend you attempt cleaning your own sensor. Let a camera repairman do it.

But what is film, really? It's just a strip of plastic that has been coated with a light-sensitive chemical. The chemical soup on the film is loaded with grains of silver halide. The silver halide reacts when exposed to light, and that is the essence of photography. The longer the film is exposed to light, the more the silver is affected. How did photographers traditionally determine what film they needed to purchase? By an ISO (International Organization for Standardization) rating that determined how sensitive the film was to light. The higher the ISO rating, the more sensitive the film was to light.

The size of a camera's aperture at any given moment is called the *f/stop*, also sometimes referred to as the *f/number* of the lens. F/stops are represented by numbers that start with "f/"— such as f/2, f/5.6, and f/11. The larger the number, the smaller the opening, so an f/22 is very, very small (not much light gets through to the film), while a lens set to f/1.2 is a huge opening that floods the film with light. Changing the camera setting by a whole f/stop, such as from f/5.6 to f/8 or f/11 to f/16, doubles or halves the available light, depending upon which way you're going. If you adjust a lens from f/8 to f/11, for instance, you've reduced the light by half.

FIGURE 3-2 Each of these combinations results in the same amount of light reaching the film.

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to $f/8$ or $f/11$ to $f/16$, doubles or halves the available light, depending upon which way you're going. If you adjust a lens from $f/8$ to $f/11$, for instance, you've reduced the light by half.

We'll talk about this in more detail in Chapter 4 (it's really important, yet really simple), but for the moment take a look at Figure 3-2. This diagram shows the relationship between the f /stop and the shutter speed. If you reduce the shutter speed, you need to increase the diameter of the aperture in order to have enough light to take a properly exposed picture.

This concept—that there are many equivalent exposure possibilities by varying the shutter speed and aperture—is illustrated in Figure 3-3. Here's how it works: If you know that any given combination adds up to a good exposure (let's say $f/5.6$ at $1/60$ second), then you can find an equivalent exposure setting by traveling along a diagonal line. In this example, $f/4.0$ at $1/125$ second will yield the exact same exposure.

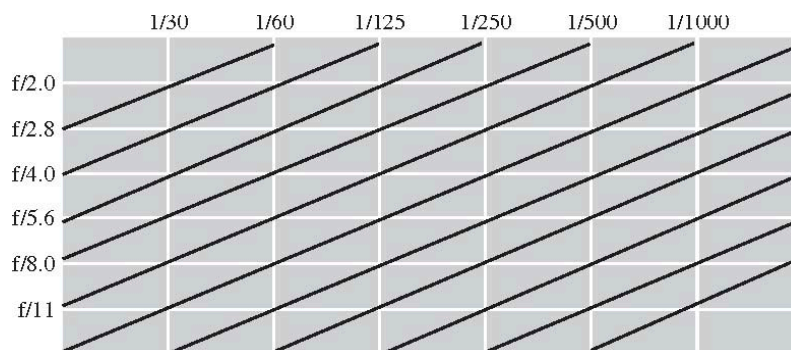


FIGURE 3-3

You can see how shutter speeds and aperture settings relate to each other in an Exposure Equivalency chart.

What do silver halide and image sensors have in common?
They are sensitive to light.

Here are some situations in which you might need to increase the ISO:

- You're shooting in a low-light situation, such as early evening or indoors. Natural-light photos have a certain appeal, and by increasing the light sensitivity of your camera you may be able to shoot a picture without using the flash at all. Using natural light can eliminate harsh shadows and produce more natural colors.
- Your subject is too far away for the flash to have any effect. During the day you might be outdoors and want to take a picture of something, but there's not quite enough light— such as in winter or during very overcast conditions. Your camera wants to use a flash, but your subject is just too far away. As you'll see in Chapter 5, the flash on your digital camera has a very limited range; so to properly expose your picture, you need to use “faster film”—that is, increase the camera's ISO setting.
- You're shooting at night. Most digital cameras have limited ability to take pictures at night or in near total darkness. As a result, if you want to capture anything at all with a night shot, you may need to increase the camera's light sensitivity to the maximum.

If night photography interests you, investigate what I refer to as “performance” digital cameras—cameras that include manually adjustable shutter speeds and apertures. Using more full-featured cameras lets you perform long exposures for light trails, glowing illuminated signage, and other special effects.

What's the logic behind the camera's automatic settings?

The photographer wants to take a picture using the fastest available shutter speed to minimize camera shake and motion blur from objects moving inside the picture.

What is the (traditional) sunny 16 rule?

Outdoor camera settings on a bright day, aperture f/16, shutter speed 1/the same as the film speed (ISO).

Digital Settings have changed to accommodate different shutter speeds found on a digital camera.

http://www.photokaboom.com/photography/learn/tips/054a_exposure_sunny_16.htm

Traditional Sunny 16 Rule:

You don't need a light meter. You can set the exposure using the Sunny 16 Rule.

In bright sunlight, set the lens opening to f/16 and the shutter speed to the reciprocal of the ISO.

An Example

You're photographing in bright sunlight. What's bright sunlight? Use the shadows to evaluate the brightness of the sun and sky. In bright sunlight, shadows are dark with sharp edges. Let's say you've set the ISO to 200. For the correct exposure, set the lens opening to f/16 and shutter speed to 180. 1/180th is the closest shutter speed to ISO 200. In other lighting situations, use the table below:

Aperture	Lighting Conditions	Shadow Detail
<i>f/22</i>	Snow/Sand	Dark with sharp edges
<i>f/16</i>	Sunny	Distinct
<i>f/11</i>	Slight Overcast	Soft around edges
<i>f/8</i>	Overcast	Barely visible
<i>f/5.6</i>	Heavy Overcast	No shadows
<i>f/4</i>	Open Shade/Sunset	No shadows
Add One Stop	Backlighting	n/a

(http://en.wikipedia.org/wiki/Sunny_16_rule)

Instead of relying on an all-automatic or all-manual exposure system, you can compromise and use your camera's shutter or aperture bias, if it has one. The idea with these controls is that you select either an aperture or a shutter speed, and the camera automatically selects the other half of the exposure for you.

Aperture and shutter priority modes are discussed in more detail in the section "Use Your Camera's Various Exposure Modes." These settings are usually used to find the right balance between freezing (or blurring) motion in a picture and

focusing attention on the subject by sharpening (or blurring) the background of an image.

If you or the camera bases the exposure on the darkest part of a scene, the rest of the picture might end up overexposed. Pointing the camera at the lightest parts, on the other hand, can result in overall underexposure.

There are several solutions to these kinds of problems, and you can experiment to see which works best for you in various situations. Here are some ways you can correct your exposures when you see a problem in the viewfinder:

- **Use exposure compensation** Use the exposure compensation control, sometimes abbreviated as “EV” or labeled with a +/- symbol, to intentionally under- or overexpose your pictures beyond what the camera’s exposure sensor recommends.

- **Switch metering modes** Use a different kind of exposure meter to account for high-contrast images.

- **Use exposure lock** Lock your exposure on a different part of the image, and then recompose the picture and shoot.

Bracket for Success

A common photographic technique that you might occasionally want to try is called *bracketing*. Bracketing your photos is simply the process of taking several pictures, each with a slightly different exposure, so at least one of them will look the way you want. When you’re done, review all the bracketed pictures on your PC and discard the ones you don’t like.

Suppose you’re trying to take a silhouette, for instance (something I’ll talk about in more detail in Chapter 5). You need to make sure the subject is sufficiently underexposed that it appears totally dark, with no detail. How can you do that?

There are two common methods for bracketing:

- **Use your camera’s auto-bracketing feature** Many digital cameras have something called auto-bracketing—turn it on, and it’ll take three pictures in quick succession when you press the shutter release. One will be the “proper” exposure, but it’ll also capture slightly over- and underexposed images for insurance.

- **Use exposure compensation** Take one picture normally, and then take additional photos after changing the EV dial to under- and overexpose. You should start with exposure variations of a half-stop or full-stop (1/2 or 1 on the display), since more than a full stop of exposure compensation can be dramatic.

Program The program mode (usually indicated by the letter *P* on your camera’s dial or LCD display) is similar to an automatic mode. Although the camera selects both the aperture and shutter, you can generally modify the camera’s selection by turning a dial or pressing a button. The effect: you can increase or decrease the

shutter speed, and the camera will adjust the aperture to match. This is a good compromise between fully automatic operation and manual selection. Use this mode if you don't want to worry about devising your own exposure values but still want some say over the shutter speed or aperture.

Scene Many digital cameras come with a handful of scene modes with names like Night, Portrait, Sand & Snow, Sports, and Landscape. Select the scene name that best represents the kind of picture you're trying to take, and the camera will automatically set the depth of field, exposure, and other factors to give you a good picture. Sports mode sets the shutter speed very high, for instance, while Sand & Snow compensates for the very bright background, which would otherwise underexpose your photo. When used appropriately, these scene modes work great and let you properly expose a wide variety of settings with little effort. Cameras with just a few scene selections may place the icons on the body (such as on a control dial; see the following illustration), while cameras with many scene selections tend to place them in the onscreen menu.

■ **Shutter priority** This setting is usually indicated by the letter *S* on your camera's mode dial or LCD display. Using this mode, you can dial in whatever shutter speed you like, and the camera accommodates by setting the appropriate aperture to match. This mode is ideal for locking in a speed fast enough to freeze action scenes, or slow enough to intentionally blur motion. If you are trying to freeze a fast-moving subject, you might find that you can't select a really fast shutter speed. That's probably because there's insufficient light. To fix that, increase the camera's ISO setting, which will make the sensor more sensitive to light and let you shoot with a fast setting. Remember to return the ISO to its default setting when you're done.

■ **Aperture priority** This setting is usually indicated by the letter *A* on your mode dial or LCD display. Using this mode, you can dial in the aperture setting you like, and the camera accommodates by setting the appropriate shutter speed. Use this mode if you are trying to achieve a particular depth of field and you don't care about the shutter speed.

■ **Manual** The manual mode (typically indicated with an *M*) is like an old-style noncomputerized camera. In manual mode, you select the aperture and shutter speed on your own, sometimes with the help of the camera's recommendation. This mode is best used for long exposures or other special situations when the camera's meter is not reliable.

What camera settings does the author recommend for portraits?

Aperture Priority and 100mm lens if you have one.

What camera setting is typical for action or freezing action?

Shutter Priority

What camera setting works well with Nature and Landscapes (Not automatic setting)?

Aperture Priority, more control over the depth of field. Also use a wide angle lens like a 35mm so that you can include expansive amounts of land, air and sea.

We see the world_____.

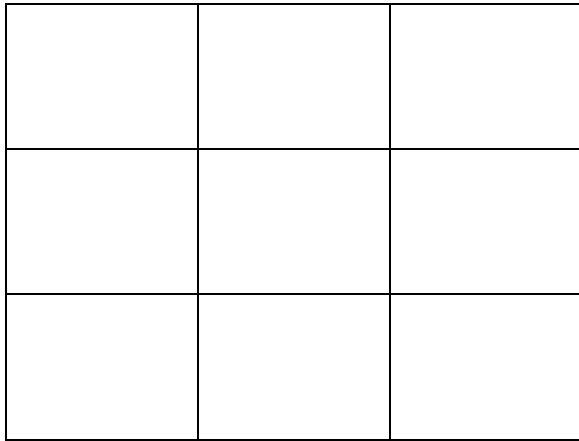
A. panoramically with rounded corners.

Rules of Composition-

1) Isolate the Focal Point: Decide what the subject is and focus on it.

What is a secondary focal point? When the focal point of interest fills the photograph, the secondary focal point is the subject that breaks up the monotony.

2) Rule of Thirds



Where are the sweet spots? What are sweet spots?

3) Focus Off-Center:

■ **Use focus lock** Virtually all digital cameras have a two-step shutter release—press lightly on the button (so it only goes half-way down), and you set in motion a series of events in which the camera prepares to take the picture. Most importantly, the camera measures the distance to the subject in the autofocus zone (usually the center of the viewfinder) and locks focus. As long as you keep some pressure on the shutter release, you're now free to reposition the camera and compose the shot any way you like. When the scene is composed to your liking, just press down the rest of the way to capture the photo. Focus lock is a common and powerful way to lock the focus on a person, and then recompose slightly to put him or her in the rule of thirds sweet spot.

■ **Use focus zones** many cameras—especially models with multi-segment metering (see Chapter 3 for an explanation of that)—let you control what part of the viewfinder is used as the focusing zone. Instead of focusing from the center and using focus lock to recompose the shot, you can use a control on the back of the camera to tell the camera to focus using a zone on the right, left, top, or bottom of the viewfinder, like the ones depicted in the following viewfinder illustration. That way, you never need to focus lock and recompose. Just set the active focus zone over the subject and take the shot. With practice, you can change focus zones using your thumb without ever looking away from the scene in the viewfinder.

What do you have to be careful with if you are using focus lock? Focal distance- the photographer can not twist or torque his or her body before pressing the shutter release.

4) Fill the Frame? What does this mean? Limit empty space, unless the empty space is part of the message.

5) Move the Horizon

Where should the horizon line be if you are taking a seascape? Top one third of the photograph.

Where should the horizon line be if you are emphasizing the sky? Bottom one third of the photograph.

What is the golden rule that applies to these two questions? Rule of Thirds

6) Use lines, symmetry and patterns

What do lines symmetry and patterns add to a two-dimensional shot?

Perspective, sense of depth, a viewer's path, artistic quality and balance

7) Tell a story. What is photojournalism? The photograph can stand by itself and tell the story without the viewer reading additional information about the incident.

8) Know when to Break the Rules.

Perspective- change the position of the viewfinder as well as your position, for example stand on something or squat.

Ignore symmetry- What is this change called? Asymmetrical balance. What does it create for a story? Disruption, Drama and sometimes Tension.

Surprise the viewer- Take a common shot and add a twist, for example frame the window or door as well as what you see through the door.

Add additional focal points- What is a good way to maintain interest of a photograph that has several focal points? Make another compositional rule

dominant in the photograph; for example, create a line or geometrical pattern for the viewer's eye to follow.

9) Emphasize depth of field

Define depth of field: The region of proper focus that is available to the viewer of the photographic image.

What are the factors that determine the depth of field?

Aperture, focal length, and the distance the photographer is away from his or her subject

The focal length of a telephoto lens is a _____ angle of view compared to the focal length of a 35 mm lens and a fish-eye lens, which have a _____ angle of view.

What additional piece of equipment is necessary when using a telephoto lens? --Tripod.

FLASH AND LIGHTING

Two ways to use flash-

As the main source of lighting

As a secondary source to fill in shadows

Range of Flash- Maximum range is about 20 feet for a built-in.

Minimum range is about 3 feet for a built-in

Settings for a built-in flash are typically:

Off

Auto

Forced

Red eye

When using a flash for fill, What other setting does a professional photographer typically change?

The intensity of the flash can be reduced on professional cameras in bright light.

What is rear curtain sync? Adjustment made to the flash so that it fires at the tail end of the exposure-also called_____.---slow sync. What do photographers typically use this setting for? To make a proper adjustment on moving lights at night

What is a mount called that is located on a camera body that holds an external flash? Hot shoe.

What is a Slave Flash? External flash unit with a built-in light sensor firing at approximately the same time as your digital camera's built-in flash unit.

Define Reflection: The act of light moving off of one subject and onto another.

Reflection can take the place of what to a photographer? _____ an external flash.

Ways to provide reflection onto your subject in bright light?

Wear a bright white tee shirt.

Use white poster board

Purchase Litediscs.

Move the subject next to something that already provides reflection, for example, water.

Why would a photographer want to use reflected light over an external flash?

Looks more natural

What is another common use for a posterboard or Litedisc when using it outdoors?

Block a breeze to prevent the wind from moving your subject.

What is the biggest hurdle to overcome with indoor photography? --The color change in light.

When does red eye typically occur? When the pupils of the subject are dilated.

Steps to take to reduce red eye-

Use red eye reduction mode on your digital camera

Use an external flash off-camera: situate the external flash to the left of the camera or to the right but never where the light can reflect back into the camera lens.

Find natural light sources and try to take the picture near them.

Why does a digital camera come equipped with a white balance option?

Light sources have different color temperatures depending on how it is illuminated.

When in a difficult setting where the photographer is having trouble adjusting his or her white balance what picture mode should the photographer switch to? The camera's RAW mode, if he or she has this option. Why? White balance can be easily adjusted on the computer after the pictures are transferred onto the hard drive.

What are the typical modes for white balance on a camera?

Incandescent lights, fluorescent lights, external flash unit, overcast, cloudy and bright.

How to set White Balance manually:

Press the menu button, advance to white balance, scroll through the options and select the best suited for the environment, then press menu until the screen returns to normal view. (Maybe twice)

White balance can be manually adjusted with a _____ or _____
_____.-- White or gray card.

How? Have your subject hold the card in place while you get to your camera settings where you can record the balance yourself. Once there fully focus in on the card and press the shutter to record the white balance, then exits the menu. There are also ExpoDiscs that are in the form of a filter, which fits over the lens that once snapped in place, the photographer takes the reading and removes it before shooting.

Night Photography

What is the biggest shortcoming of most digital cameras that prevents the photographer from extending his/her library of night or low light shots? Limited shutter speed settings or no way of taking the desired shot because the camera is not capable of long exposure time. How can we compensate for this shortcoming? Using the widest aperture setting, a tripod and adjusting the ISO to a larger number and working with flash and its particular settings. BULB setting if your camera has it.

A camera with a bulb setting allows you to do what? Hold the shutter release down to acquire as long an exposure as you need usually up to 8 seconds.

What should a photographer do if he/she wishes to shoot with a long exposure time?

Use a wireless remote control for his/her shutter release or use the self-timer on the digital camera.

Why? Prevent camera movement or shake.

What is EV? Can it be used for night photography? Explain.

Exposure meter adjustment that is set up by bracketing on a digital camera that allows the photographer to adjust his/her aperture setting or f/stop number without changing any of the other settings of the camera. To use the setting for night photography, adjust it by moving it down a few brackets to overexpose the photograph.

What is noise and how do we minimize it?

Noise is granular dots that show up on a final photograph usually caused by a high ISO setting or long shutter speeds. To minimize noise, keep the shutter speed as short as possible, use noise reduction features if the camera is equipped with them, or eliminate noise reduction in photo editing software (as a last resort)

Close-up Photography

Close-up photography is also known as _____ photography. --Macro

Look for the _____ to set your camera to shoot a macro photograph.

What is an extension tube? It is a tube that is placed between the lens and the camera body to allow the photographer to shoot with greater magnification. (It is not needed for your assignments)

What is a reversing ring? Glass lens that fits between the lens and the body camera to provide the photographer with a better macro effect than what the lens can provide by itself.

What common problem does point and shoot cameras have with macro photography?

Parallax: what you see in the viewfinder is not quite what gets photographed.

How do photographers deal with parallax when shooting with a point-and-shoot?

Camera comes with close-focus marks, correction marks or parallax marks that guide the photographers as how to shoot with the particular camera.

You should not need to purchase snap on macro or screw on macro filters for your assignments for this class, but if you have them, experiment with their variations.

A _____ tripod works well with indoor macro photography. --Miniature

Use a _____ lens and a _____ tripod for outdoor macro photography. telephoto and sturdy

Why would a photographer use a beanbag? Beanbags are pillows of little beans that have a tripod screw on the end that can be attached to the bottom of a camera body to provide stabilization for the camera while the photographer takes a picture so that camera shake is avoided.

What are the three determining factors of macro depth of field?

Distance, Aperture, and Light.

What line of sight takes a better macro picture (typically)? Parallel

What's a great way to diffuse a flash? Photographer's Gel or cover it with a white tissue.

What's a plamp? clamp made specifically for a tripod to hold a subject still.

I don't think it's necessary to experiment with flash while attempting macro photography closer than a couple of feet. Why? Blockage. What is that? Lens is in the way of light emitted from the flash. Other reasons? Most cameras will not let the flash fire in the macro setting. You may experiment on your own, but it is not required for our assignments.

Why do photographers use light domes or tents? To keep light from reflecting off of the subject back into the camera lens

ACTION PHOTOGRAPHY

What is the biggest complaint among photographers who take action shots?

Shutter Lag.

What is shutter lag? It is the pause between when the shutter button is pressed and when the final picture is taken.

What are remedies for shutter lag?

pre focus or focus lock if camera does not automatically disable when in Shutter Priority Mode

Set your white balance according to the environment

press the shutter in advance

Experiment with Continuous Fire or Burst mode on your camera settings

Pan your action

_____ mode was created specifically to freeze action. --Shutter Priority

What are two common symbols that represent Shutter Priority on digital cameras?

A or TV

What's happening with the shutter speed if the photographer cannot bump it up to the fastest shutter speed that is available to his/her particular camera?

The available lighting is not strong enough, so the photographer can bump the light sensitivity of his/her image sensor by increasing his/her ISO rating.

Pan for Action

_____ captures the subject in good, sharp focus, while holding the background as a motion blur. --Panning

Fireworks

Suggestions on shooting fireworks

Manual or Landscape shooting mode

Wireless remote for shutter release

Tripod

Longer shutter speed, for example, 1 second

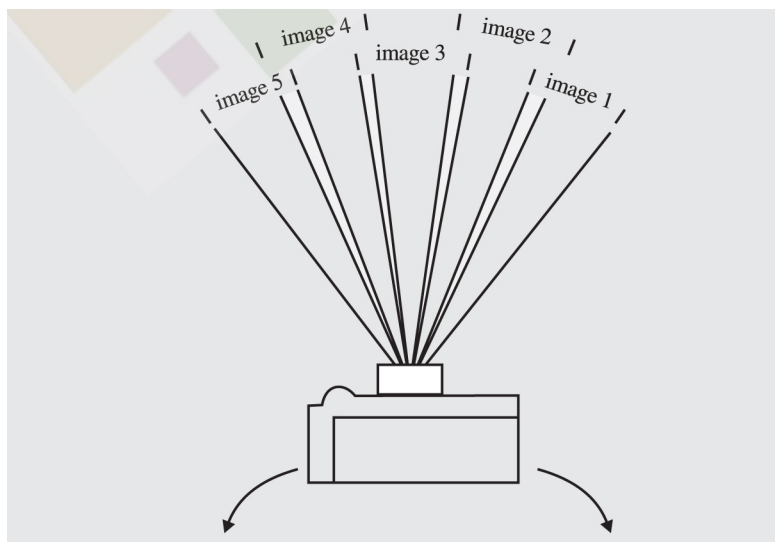
f/8 - f/16 Aperture setting to preserve the color of the fireworks

Creative Suggestions:

Use your camera's color mode selections. If you are not sure about how you want to use your pictures in the future take a shot with a color scheme and also take the same shot in its normal color mode, because bear in mind photoshop and other editing programs allow you to change a photograph's color scheme later.

Make a Panorama: _____ photographs are extra wide photographs. --Panoramic

Some digital cameras have built in guides to help you shoot a panorama. If not make sure the camera is mounted on a tripod and the horizon is level in the view you see in your LCD of your camera. Take your first shot on the left and move the camera approximately 60% away from the original view to the right (by moving the tripod handle- NOT THE WHOLE TRIPOD) and take another shot. Do this about 4 or 5 times and make sure that when you move the camera with the tripod handle that you are only moving it from left to right and not up and down. Don't move the tripod. Stitch these photographs together later in a photo editing software program.



Author: Dave Johnson

If you have access to additional lens types and filters, experiment with them, but I am not requiring you buy any additional. I would rather see you invest your money in a couple of good lenses to start and your camera body along with tripods and other necessities.

If you have the extra money to invest in additional lenses and filters, get these first:

- neutral density filter- will reduce the incoming light by one or two stops without changing the settings on your camera

- Macro filter lenses

- UV or skylight filters

- Circular polarizer (reduces reflections on glass)

Taking pictures through a telescope requires what additional equipment?

- LE adapter

- step rings if the camera lens is not standard size, 37mm or 52mm

Experiment with Time Lapse Photography: A series of pictures that demonstrate change over time to the same subject.

Experiment with your camera's movie recorder and use movie maker software to stitch together a movie from photographs that you have taken.

Traveling With Your Camera

Invest in a variety of tripods and a monopod. Depending on your traveling excursion, you may need a small tripod, but larger ones are better for longer exposure times.

- Try a beanbag if you cannot carry a sturdy tripod (www.thepod.ca)

- Try the QuikPod (www.quikpod.com/home.asp)

- Experiment with plamps (www.tripodhead.com)

- Invest in a good camera bag

- Make sure you carry your lens covers at all times

- If you are out in the rain or snow, have appropriate gear to protect the camera.

Pop up shades for the LCD displays on the back of the digital cameras are very useful when you are photographing in direct sunlight and also when storing the camera.

- Clean your camera with a damp lens cloth and lens fluid applied to the cloth. If you constantly shoot outdoors, consider camera armor.

If you shoot in the rain, dress the camera in a rain cape (www.ewamarine.com) or an Aquapac (www.aquapac.net)

Remote triggers are essential for those photographers that like to maximize their exposure time. Use your self-timer if you do not have access to a remote trigger.

_____ is recording a latitude and longitude into the metadata of a photographic file, marking the location of where the photograph was taken.
Geotagging

PART II

TRANSFERRING IMAGES

Navigating your way around on a Mac

<http://www.apple.com/findouthow/mac/> - anatomy

Main Photographic formats:

JPG, JPEG

JOINT PHOTOGRAPHIC EXPERTS GROUP ("jay peg")

lossy- some of the data is lost to compress the file.

TIFF

TAGGED IMAGE FILE FORMAT

Optional to compress or not to compress

lossless preserves 100 percent of the information about every pixel in

the original image.

RAW

Completely lossless

Hold greater amounts of color information

preserves the "raw" image file before the camera does anything to it.

PNG

PORTABLE NETWORK GRAPHICS

Open, Extensible Image Format with lossless compression

Capable of transferring the image with a transparent background

The compression of .jpeg files can eventually degrade the quality of the file if the file is saved several times and the author recommends a photographer do

what to prevent this? Change the .jpeg file to .tiff file after transferring the files from the camera to the computer.

Choose a favorite photo editing software program like Adobe Lightroom or Photoshop Elements to edit your photographs. I will try to give some leeway here, because many of you have software editing programs that come with your camera. These programs are exceptional for editing RAW files.

Export the jpeg files out for web or smaller compressions to preserve the original files. Web compression is vital for streaming and sharing photographs and this can be done in almost any photo editing software program. You may want to set the resolution and size before exporting the file. When you are save .jpeg files stay between 9-12 compression levels to reduce dramatic changes to the picture's quality. When exporting files for the web change the file title so that you can easily tell it has been compressed for web streaming. An example, DN1899.jpeg to DN1899_Web.jpeg or save the images in an image folder specifically for web images.

Working with original photographic files- open the original file in your favorite editing program and immediately save it as another file name, so that you do not change the original file.

I will not be testing on any camera external memory other than the SD card because it is the only device yet so far that seems universal. You are responsible for figuring out the external memory devices for your own camera if it is different. Your camera manual is a great asset for this.

SD (Secure Digital) is a removable memory for many devices and is the most popular storage media for point-and-shoot and SLR cameras. Many people think SD stands for SanDisk.

DO NOT take the author's advice when he states throw discs away that came with your camera. This book is slightly outdated and there are photo editing programs that come with your camera that you can grow to love and it is one less thing that you have to pay for! For instance, My Mac Pro will not read my Nikon SD without the Nikon transfer software program that came with my Nikon point-and-shoot.

You do not have to take your memory card out of your camera to transfer photographs to the computer if you have the camera's _____
_____. --USB Cable

Once you transfer your images don't forget to _____ the camera's external memory device. --format

There are several software programs specifically develop to recover erased files on an external hard drive that have been accidentally erased.
(www.objectrescue.com)

FINDING AND ORGANIZING YOUR FILES

Use the work environment we set up in lab to keep your photos organized. Photo importers can be set up to order your photographs in chronological order, which will work for this class. The editing program can be conformed to drop the images in your desired folder by setting it as the default file.

_____ your photos after you begin collecting too many to sort through.--Tag

Store your class folder on a USB storage device and archive it onto a DVD.

PART III

Digital Darkroom: CPU, Monitor, Printer/Scanner, USB Cable/Memory Card Slot, Photo Editing Software Program.

To batch photographs for web sharing, the simplest program to use with a Macintosh is_____. Preview

Basic capabilities of Preview:

<http://www.usingmac.com/2008/8/5/10-handy-mac-preview-application-tricks>

Batch in Preview:

<http://www.youtube.com/watch?v=8pMTi2O9Kco>

What Adobe software organizes files, opens other software and works within Adobe Photoshop? Adobe Bridge

<http://tv.adobe.com/watch/learn-adobe-bridge-cs5/what-is-adobe-bridge-cs5/>
<http://tv.adobe.com/watch/learn-adobe-bridge-cs5/creating-image-galleries-with-adobe-bridge/>

How Adobe Bridge functions in a workplace:

<http://tv.adobe.com/watch/learn-adobe-bridge-cs5/use-mini-bridge-in-cs5-applications/>

Working with Photoshop5 to develop your Portfolio:

http://www.adobe.com/designcenter/keyconcepts/articles/concept_index.html

PART IV

Portfolio Tutorials

<http://www.youtube.com/watch?v=hEdp0dl1VGU>

Working with iWeb (iWeb will no longer be supported by Mac, but many people are still using the software). It is a great application tool to familiarize yourself with how a website works, if you're just learning to code. These tutorials are still available so take advantage of them while you can:

http://manuals.info.apple.com/en_US/iWeb_Getting_Started.pdf

<http://www.apple.com/findouthow/web/-intro>