

Choosing a Digital Camera

Digital cameras have become extremely popular. Whether you are buying your first digital camera or looking for a newer model than you currently own, you may want to consider the following points before making your purchase.

What kinds of digital cameras are there?

The largest group of digital cameras is “point and shoot,” or compact, digital cameras. They usually have a zoom lens and occasionally include the ability to adjust exposure controls. Mostly they are designed to be automatic cameras. Some models literally fit in a shirt pocket or purse; others are bulkier and look more like a “regular” camera. Prices range from about \$100 to \$1000. This is the type of digital camera most people consider for their first purchase.

The more advanced digital cameras are interchangeable lens cameras, also called digital SLRs (for Single Lens Reflex). These look and operate much like traditional film SLR cameras and can use a variety of lenses, from extreme wide angle to extreme telephoto to dedicated close-up lenses. All provide the capability of manually adjusting exposure controls such as lens aperture, shutter speed and sensitivity to light. Their prices range from \$500 to \$4000 (and more), including a zoom lens.

What features should I look for in a digital camera?

The features that are most important for you depend on how you use a camera, what you plan to do with the photos you take, and how much control you want of the picture-making process. Nearly any digital camera does a good job with general scenic and people photos. Here are some features to look at when comparison shopping.

Lens

The lens the camera has directly affects the look of your photos. Wide-angle lenses let you get more in your picture and are useful for photographing large groups of people, landscape scenes or interiors of small rooms. Telephoto lenses let you enlarge subjects that are far away, such as athletes, wildlife or the top of a mountain peak. A macro focus setting lets you take close-up photos of small subjects like wildflowers or stamps.

Most digital cameras come with a zoom lens, one that includes both wide angle and telephoto settings. Camera companies describe the amount of zoom a lens has in terms of magnification, the “X” factor. For example, a 7mm-21mm zoom lens can be described as having a 3X lens zoom (21mm is three times as long as 7mm). A larger zoom range (such as 10x) means you can take pictures of subjects farther away.

A recent addition to digital cameras, especially those with a large zoom range, is *image stabilization* or *anti-shake* technology. This is a set of special gears and sensors built into the camera or lens that helps keep it steady when you are taking photos. Image stabilization can increase your ability to get sharply focused shots at long zoom settings.

If you want to take close-ups of small subjects, look at the camera's macro focus setting. On compact cameras, this can vary from one inch to eight inches. The closer the camera can focus, the larger your small subject appears in the picture. If you are considering an interchangeable lens camera, you need close-up filters or a special macro lens to get the same results as you would with a compact camera's macro setting.

Manufacturers often advertise a compact digital camera's *total* or *combined* zoom capabilities. This is the effect of using both the lens zoom and the digital zoom on the camera. (Interchangeable lens cameras do not have digital zoom.) "Lens zoom" is the range of a zoom lens based on the actual pieces of glass and gears in the lens itself. "Digital zoom" is not based on the physical make-up of the lens. Instead the center portion of the picture is cropped and a program in the digital camera "enlarges" the image to normal size. In most cases, this process does not produce a sharp image. So concentrate on the optical lens description for sharper pictures.

Viewfinder

How you frame the picture you want to make is an essential part of photography. With digital cameras there are three possibilities.

First, all compact digital cameras let you use the *LCD screen* on the back to frame a scene. LCD screens give you an accurate view of the subject, but they can be difficult to use in bright sunlight. Some interchangeable lens cameras offer a version of this feature called Live View. But you need to have the camera on a tripod or other support to use it.

Next is a traditional *window viewfinder* like that on a film camera. Window viewfinders make it easy to see your subject, even in very bright conditions. They may help you get a sharper picture because it is easier to hold the camera steady when it is pressed against your face. All interchangeable lens cameras have a window viewfinder, which shows what the lens sees. The window viewfinder on compact digital cameras is not as accurate as the LCD screen on the back; you may end up with more in your picture than you saw.

Finally, some digital cameras have an *electronic viewfinder* (EVF). This is located in the same place as a window viewfinder but is really a miniature LCD screen. It can be easier to see in bright conditions than the LCD on the back of the camera because your face blocks the light. However, it may not look as sharp as a window viewfinder and may seem "jumpy" if you move the camera quickly.

Image Size (Megapixels)

The size of the picture that a digital camera makes is usually given in *megapixels* (millions of pixels, the "dots" that make up a digital image). The higher the megapixel count, the bigger you can print the photo.

How many megapixels do you need? It depends on what you plan to do with your images. If you only make 4x6 inch prints and send email photos, then a 7 or 8 megapixel camera will be quite sufficient. If you want to make 16x20 inch or larger prints to mat and frame for yourself and

others, then you might look for 10 megapixels and up. Nearly all digital cameras now come with enough megapixels for everyday use.

Storage media

Digital cameras save your pictures on *memory cards*, which you can think of as “digital film.” Several different types of memory cards are available in digital cameras:

- Secure Digital (SD) cards
- Compact Flash (CF) cards
- xD cards
- Memory sticks

Most digital cameras come with a Secure Digital (SD) card. It is about the size of a large postage stamp and is available in different capacities (up to 4GB or more). Sometimes a small capacity card (16MB or 32MB) is included with the camera. Compact Flash, Memory Stick, and xD cards are all variations on the Secure Digital model. While different in physical size, they can hold just as many images. Sony digital cameras are the only models to use memory sticks. Some cameras come with built-in, non-removable memory. However, this usually cannot store as many pictures as a removable memory card.

Most people buy a large capacity memory card at the same time they purchase their digital camera. The large card lets you take more images before the card is full and you have to insert a new memory card or move the images off the card. I recommend having two 2-gigabyte (GB) memory cards instead of one 4GB card or two 4GB cards instead of one 8GB card. This keeps you from losing all your photos if you misplace your single memory card.

It is not necessary to have lots of memory cards. Memory cards are reusable. When you fill them up, you transfer the photos to your computer or a CD at a photo lab, erase the old pictures from the card, and then record new ones. Memory cards are designed to perform many repetitions of saving and erasing pictures before they need to be replaced.

How much control do I want over my picture-taking?

If you just like to take pictures and simplicity is important to you, look for compact cameras with the least number of buttons and menu choices. They generally are designed to make fine photos on automatic with a minimum of adjustments from you. If you are a “serious” photographer, or plan to become more serious, interchangeable lens cameras give you the most options for different lenses and controls over how your image looks.

Many cameras between simple and complex exist to give you varying degrees of control over how the camera works. But all models can be used on complete automatic when you do not want to fuss with the buttons. There is no one best camera; the right one depends on your individual interests and needs. Below are some camera controls that can help you make better photos than just shooting on automatic.

What are some useful camera controls?

Scene Settings

Nearly all digital cameras have some scene settings. These are shortcuts to help you get better photos without having to change lots of buttons on your camera. Compact cameras usually have more scene choices than interchangeable lens cameras. Some common selections are Portrait (people or pets), Landscape (scenic views), Kids & Pets or Sports (moving subjects), Snow and Fireworks. You select the scene setting that matches the subject you want to photograph and the camera adjusts to give you the best result.

Flash Adjustments

Most digital cameras come equipped with a small built-in flash. It can add light to outdoor portraits and provide extra light indoors and in low light situations. Look for models that let you turn the flash on or off and adjust the intensity. This allows you to override the programs built into the camera and often achieve better pictures than on total automatic.

Most built-in flash units are not very powerful. So if you take lots of photos indoors, you might want to consider a model to which you can attach an add-on flash.

Exposure Adjustments

Most digital cameras are designed to set exposure automatically. Many cameras have an *exposure compensation* control that lets you adjust how light or dark the photo is. A few models allow you to adjust exposure with shutter speed and/or lens aperture settings.

Sensitivity Settings

You can adjust the light sensitivity on most digital cameras, based on the conditions where you are shooting. Cameras with more sensitivity (ISO) choices give you more flexibility than models with only an automatic sensitivity setting. Low settings like ISO 100 are for bright sunny days. High settings such as ISO 800 or 1600 are for night or theater photos without flash. But high sensitivity settings can make your pictures look “grainy” or mottled due to “noise”. Check camera reviews for how well the camera performs at higher settings.

Continuous Shooting

A feature called “burst” or “continuous shooting” allows you to capture multiple photos with one press of the shutter button. Burst mode helps to compensate for digital cameras’ lag time between pressing the shutter button and recording the photo. If you like action photography (which includes pets and small children), this is a feature to look for.

White Balance

The white balance setting compensates for the color of the light in which you are taking a picture, such as removing the orange cast from indoor photos. All digital cameras have automatic white balance. It works on the same principle as automatic exposure and adjusts color for you when you take the photo. Many models give you the option to select a specific white balance setting, say for fluorescent or incandescent lighting, to get the best color under artificial lights. This is a helpful feature, especially if you take lots of indoor pictures.



Where can I find more information?

It is helpful to compare features among brands and models and to try out the cameras. Most manufacturers have websites where the technical information about their digital cameras is displayed. You can also visit other photography related websites to learn more about digital photography in general.

Visit camera stores, electronics stores and department stores where digital cameras are sold. Pick up the cameras, try the controls, and see how easy it is for you to use. If necessary, ask to see the owner's manual to review what features the camera has.

Armed with this information, you can be well prepared to select a digital camera that will meet your needs and be fun to use!

Kathy Eyster Photography
Digital Photography Instruction
<http://www.KathyEyster.com>
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