Consumer Digital Cameras
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Introduction

...what defines a consumer camera?
With the growing technology of the digital camera industry, it’s difficult to keep up with the latest camera models. With eye-dazzling designs, clever marketing, and millions (okay maybe not millions) of features, who can decide on a digital camera without wanting the next one that comes out just a month later?

Everyone wants a digital camera for all the right reasons. No more purchasing film, processing and prints and no more waiting to see your results; instant previewing of images, easy sharing ability with friends and family, sleek designs - and instant cool.

For all you film camera buffs out there, here’s a quick run down on the differences between film and digital cameras.

Instead of film to record images, digital cameras have a small sensor chip called a CCD or CMOS that captures the image in digital format. These sensor chips have a surface that records tiny squares called pixels. Each pixel records one segment of an image. The more pixels a sensor has, the more details can be recorded. This all gets saved on a memory card so you can transfer the image from the memory card to your harddrive. The memory card can have capacities just like a harddrive and the larger your files are, the more space it takes up on the card. Essentially digital cameras have eliminated the necessity of negatives and have replaced it with the memory card.
Digital cameras come in three categories to suit different kinds of users. There are point and shoot compact cameras, advanced compact, and DSLR (digital single lens reflex) cameras. This buying guide is intended for compact camera consumers. We also have a separate guide that covers professional DSLR cameras.

Point and Shoots
For easy handling and automatic features, point and shoot is the way to go. As the name implies, these cameras are designed to do just that: Frame your picture and click the shutter. The automated features allow you to shoot various scenes and subjects. No extensive photographic experience is required.

These cameras are perfect for beginners and hobbyists who don’t require manual features but want handy tools that help reduce red eye and hand shake while they improve results with automatic scene selections. Want to take a portrait of your mom? Choose the portrait mode and away you go.

Usually lightweight, easily portable, slim and very sleek, these cameras can fit into pockets and are great for taking snapshots at any time.

Easy and Fun Cameras »
Compacts
A step up from the point and shoots, advanced compacts are also fully equipped with automatic features. Many of these cameras have manual control over exposure, aperture, speed, and white balance (all of which are explained later on). Furthermore, additional image quality features are typically introduced in this level. Image stabilization technology can be incorporated into lenses to combat blurry photos in situations of low light or shaky hands. Red Eye Reduction is also built in to some of the flashes to reduce unsightly red eyes in portraits.

Advanced Compacts
These DSLR types are not quite in the professional range but physically resemble a DSLR body. The ISO on these cameras tends to be higher, and typically they boast a high megapixel for larger photographic capabilities. Many of the features, such as aperture, shutter speed, white balance and exposure can be adjusted manually. Advanced compact cameras also have the option of attaching imaging accessories like close up lenses, filters, and flashes. They are usually bigger due to larger zoom capacities but can still easily be carried in a purse or stylish camera bag.

Quick note on DSLRs
This buying guide doesn’t cover DSLRs but here is the difference. DSLRs are made for professional or presume users who require manual adjustment capabilities with higher quality CCD sensors and lenses. The bodies are often sold separately from the lens, allowing the photographer to choose from a variety of telephoto, wide angle, zoom, and specialty lenses suited to different photo opportunities. Customizable in every fashion possible, advanced users can also add flashes, filters and numerous accessories to suit their photography style.

Features

...what should you look for?
Every few months or so, a new camera is introduced to the market that makes your buying decision even harder! With so many models to choose from, it’s hard to know the essential features to look for. So be prepared to experience camera envy after you’ve purchased your camera. Hopefully with smart buying choices, you will buy a camera for its true features instead of the bells and whistles that you will have no use for in the future.

What you actually need versus what you think you need
Let’s take a moment to consider your real requirements. With all the new and improved features of digital cameras, you need to focus on what you actually need the camera to do. Will you be shooting mostly indoors or outdoors? Are your subjects fast-moving, like sports, pets or kids? How often will you encounter low lighting situations? The list of considerations may seem daunting but it’s worth the read. Few photographers will require all the features listed, but this is the stepping stone to establishing which features are for you.

» Megapixels
» Total Zoom: Optical and Digital
» LCD screen
» ISO
» Manual control
» White balance
» Image Stabilization
» Red Eye Reduction
» Battery
» WiFi
» Style and size

Megapixels
Many mortar and brick stores focus on megapixels, with the general rule that the more megapixels the better. Yet it’s not always true! Let’s explore what megapixels really are and what they mean to you.

Digital pictures are composed of a series of dots called pixels. The more megapixels you have, the more detail a camera can capture which directly translates to how big you can print your picture before it becomes grainy or unclear. Think of a picture on a mosaic composed of many tiles. The more tiles, the clearer the image, and the better the quality.

Because megapixels greatly affect the price of your camera, you should figure out what size prints you would like and adjust your budget accordingly. If you will never print anything greater than a 5x7 you really don’t need to go higher than a 4.0MP camera. Instead, your budget can be used for features, functions, and accessories instead of pixels that you will never use.

What are the benefits of higher resolution cameras? A great advantage of going one megapixel grade higher than your actual needs is cropping capability. You can take a photograph at 4MP (best for 8x10) and crop the image to a 5x7 without losing any quality.
Take a look at the chart below to determine your requirements:

<table>
<thead>
<tr>
<th>Print Size</th>
<th>Megapixels</th>
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<tr>
<td>4x6</td>
<td>2MP</td>
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<td>5x7</td>
<td>3MP</td>
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<td>8x10</td>
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<th>Displays</th>
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Total Zoom
All consumer digital cameras have zoom lens capabilities. The zoom function on your camera can be especially handy when you want to shoot something far away but can’t get quite close enough. It also helps with creative framing of portraits and focusing attention on the subject instead of showing too much distracting background.

Be sure to read each camera’s specifications clearly. The total zoom is measured by the optical zoom multiplied by the digital zoom. For example: 3x optical zoom and 4x digital zoom equals 12x total zoom. Be sure that the optical zoom meets your requirements and consider the digital zoom as a bonus feature.

Optical Zoom
What is the difference between optical and digital zoom? The optical zoom of a point and shoot is determined by how far the camera lens can physically extend from the camera body. This is also known as the focal length.
This allows you to get closer to your subject without physically moving yourself. The average camera will have the ability to zoom 3x, or three times closer compared to the widest setting of the camera. With optical zoom you will not lose any image quality.

Optical Zoom 3x and under »
Optical Zoom 4x to 6x »
Optical Zoom over 6x »

Digital Zoom
When the optical zoom is at its maximum focal length, digital zoom kicks in to allow you to get even closer to your subject. Without actually capturing more detail, digital zoom simulates optical zoom by blowing up a portion of the image. In essence, it is just enlarging the individual pixels which in turn creates an image of lesser quality. It may look pixilated and contain “noise” or strange colour speckles. That’s why it’s good to consider digital zoom a bonus, and don’t rely on it like you would the optical zoom.

LCD Screen
No longer a novelty, LCD screens are a huge consideration for many consumers. After all, if you can’t see the subject clearly, how are you supposed to take a photograph? Luckily LCD screens have come a long way and come in surprisingly larger sizes for easy viewing and shooting.

LCD Screen with Tilt Capabilities

More often than not, point and shoot photographers use the LCD screen located on the back of their camera instead of the viewfinder. In fact some consumer cameras don’t even have a viewfinder anymore! LCDs are convenient, allow you to shoot with the camera farther away from you, and provide immediate playback of the image(s) you just shot.

LCD stands for liquid crystal display. Screens are available in varying resolutions. The higher the resolution, the closer the LCD represents the actual image when it’s printed. You’ll use your LCD screen not only to frame your shots and preview your images – it will be the main hub containing all your menu options.

LCD screens 1.8” »
LCD screens 2.0” »
LCD screens 2.4” »
LCD screens 2.5” »
LCD screens 2.8” »
LCD screens 3.0” »
ISO
Perhaps the biggest challenge for consumer cameras is capturing low light photographs. Pictures may be blurred, subjects could appear ghostly, and sometimes they are too dark. However, technologies in ISO are rapidly improving consumer cameras and with ISO speeds of up to 3000, poor quality low light images are becoming a thing of the past!

For low light photography, it is a good idea to figure out the highest ISO setting of the camera you intend to purchase. ISO in film cameras is a measurement of how fast or sensitive the film is to light. The “faster” the film, the more sensitive it is to light, and the less it needs to be exposed. This is a huge benefit in low lighting as it will decrease blur and result in a sharper image. But there is a trade-off: The faster the film speed, the grainier or noisy the image.

What does all this mean? If you tend to take photographs indoors or at night, consider getting a camera with a maximum ISO setting of at least 800. Anything beyond that is good for extremely low lighting, but expect a grainier image. These higher ISO compact cameras tend to fall in the advanced category, but they also have automatic ISO choices for different light sources.

Manual Control
So you’re a bit of an expert, like to tweak things here and there, and prefer the control over aperture, speed, and white balance. Have no fear, advanced compacts often have manual controls over these functions.

If not, stick with the point and shoot variety. They’re fun and easy to use and if you’ll never use any of the manual overrides, why pay for the extra features?

Back to advanced compact cameras. Although they all have pre-set modes for various subject and lighting situations, sometimes trickier conditions require manual adjustment in order to achieve better quality images.

Most automatic shooting modes cover the basics such as portrait, landscape, backlighting, and close-ups. Each setting will vary the aperture, shutter speed, and focal length and each is designed for quick shooting in various situations. You don’t need to be an expert to produce quality images!
White Balancing
Most cameras have automatic white balancing built in. Here’s an explanation of the term white balance.

Light sources from light bulbs, fluorescents, and the sun emit different colours. The human eye automatically corrects this colour and recognizes whites even in slightly coloured light sources. For instance when you are outside on a bright sunny day (blue light), when you put on amber coloured sunglasses, everything appears more clear. Taking these sunglasses off, everything appears blue but your eyes adjust quickly to compensate for the blue light and quickly adapt to the environment.

Unfortunately cameras are not as sophisticated as they human eye, and can’t accomplish the same adjustment without a white balance feature. Most digital point and shoot cameras have preset white balance controls like Sunny, Tungsten (Indoor), Fluorescent, and Cloudy. Each setting will compensate for the specific light source’s colour that you can physically see in the LCD screen.

The photo on the right demonstrates how the proper white balance setting provides the best colour rendition. Notice how the whites of the models eyes are actually a pure white in the second photograph.

If you’re not sure what kind of lighting you are shooting in, try using the instant preview while you’re scrolling through the different pre-sets. This will allow you to determine which setting produces the best colour rendition. Although most cameras have an automatic white balance option, many have a custom white balance choice that will allow you to set it for a particular shot.

Image Stabilization
Blurry photographs are frustrating when you are trying to capture the perfect moment. Often, the blur is due to camera shake and slow shutter speeds. To compensate for these factors, many cameras now have an image stabilization or vibration reduction feature built into their lenses. How does this all work? Basically the lens element closest to the camera is movable. If you shake the camera in one direction, the element rotates and pivots in the opposite direction, bending the light a bit to make up for the motion. The result is a sharper image ideal for low lighting. It’s magic! Well it’s not really but it sure helps with shaky hands and it’s a good idea to invest in this feature.

Cameras with Image Stabilization »
Red Eye Reduction
We’ve all seen demonic pictures of our friends and family with horrific red eyes. Some of us may not be savvy enough to know how to correct this using software like Photoshop. However, digital cameras are getting smarter!

Red eye occurs when the light of the flash is reflecting from the retina, which is covered with tiny blood vessels. It’s most noticeable on people with blue or green eyes. Many cameras use a pre-flash to contract the pupils of your subjects prior to the actual shot. Remember this works only if your subject is looking! Red eye is particularly more evident in low lighting shots and although red eye reduction features do work, they are not completely foolproof.

Battery
What kind of battery should you look for in a camera? Most point and shoots now a days come with rechargeable batteries of some sort (good for the environment!). The camera is usually packaged with this battery and its corresponding charger.

Cameras that use AA type batteries are ideal for travelers or those that maybe be forgetful in charging their batteries. Because they use AA batteries (rechargeable or regular) they’re great for travel even if you forgot your charger at home. Use the rechargeable nickel-metal hydride (NiMH) type to cut the cost of disposable batteries and help save our earth!

Lithium Ion or Li-ion batteries are made specifically for each model. These are not the universal interchangeable batteries that can be used between various models. Generally these batteries produce more images per charge than your standard AA batteries, and often recycle more quickly than non-rechargeables — important when you’re taking candid photos using flash. You can always purchase a secondary backup battery along with your charger for travel purposes.
When going on vacation, don’t forget to bring extra batteries and a charger. You may need to bring a power conversion adapter if you are traveling to a country that does not follow the North American 120V.

**Cameras that use NiMH or AA batteries »**
**Cameras that use Lithium Ion batteries »**
**Cameras that use Lithium Ion or AA batteries**

**Wireless WiFi**
In most cases, digital cameras come with a USB cord that allows you to transfer your images to your computer. With PictBridge capable cameras, you can connect your camera to your printer directly and print photographs without ever having to connect to your computer. Wireless WiFi is even more convenient! Consumer digital cameras with WiFi capability typically include special software allowing you to send images wirelessly to your computer. With a push of a button, your images can be transferred to a designated folder on your hard drive. An added benefit is that some cameras are capable of shooting when tethered to a computer. With the program running on your PC or Mac, you can shoot images with your camera and instantaneously transfer to your hard drive for viewing and storage.

**Style and Size**
Although not truly a fashion accessory (or is it?), you should consider the size and style of your digital camera. Is the camera comfortable to hold? Switching between holding it with two hands in portrait or landscape positions and one hand shooting will determine if the camera is the right fit for you. How will you carry your camera? Slim cameras easily slip into pockets while larger digital cameras with more features or longer zooms may require a bag or purse. Locate the camera functions and buttons; are they easily accessible on the camera itself or are they in the menu functions? Once you know all the features you need plus the style of camera, your digital camera choice should be an easy one!

**Slim Cameras »**
**Compact Cameras »**
**Advanced Cameras »**

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Extra Features
...more things to consider

**Movie Mode**
Most digital cameras have a movie function built into the camera. A common video size is 640x480 at 30 frames per second, lower resolution than DVD quality. However, this handy feature allows you to take impromptu video of family and friends and distribute them on a website or through email. Many of these cameras have a microphone that allows you to record sound as well.

**Continuous Drive**
With fast moving objects, it is sometimes ideal to take multiple frames in rapid succession to capture the exact moment desired. The continuous drive of a camera determines how many pictures it is capable of taking in a given second. For instance, a camera with a 1.7 fps continuous drive can shoot 1.7 photographs per second. This feature is great for sports or for capturing a special moment such as a baby’s first step.

**Macro Focusing**
For extreme close ups or detailed photography, see how close you can get to an object before the focus becomes blurry. Some cameras allow you to close in to just 1mm from the object while others require at least 100mm. This macro ability is excellent for capturing small objects like insects, coins and flowers.

**Underwater and Anti-Freezing Construction**
Electronics are susceptible to water damage and may not function in extremely cold weather. But there are new technologies in consumer digital cameras to accommodate these conditions. People who enjoy taking vacation photographs on beaches or in snow can enjoy the benefits of these climate accommodating cameras. These cameras are made of durable materials and perfectly sealed against water. While snowboarding, you don’t have to worry about falling snow on your camera or the cold weather. And you can capture some very cool images under water.
Your Photography Style

...what kind of subjects do you shoot most often?
Now that you understand the main components that make up a great digital camera, determining your photographic style will also help you narrow down which features you need.

**Sports Fan**
Whether you follow the Maple Leafs or your child’s baseball team, shooting fast moving players can cause a lot of blur if you don’t have the right camera. To capture the play in just the right moment, consider the camera’s shutter speed, zoom capabilities, continuous drive, and sports mode. The faster the shutter speed, the easier it is to stop motion in its tracks.

Chances are you’ll be in an arena or a large field where the players are a long distance away. Find a camera with a long zoom so you can capture these moments as if they were right in front of you.

Because your subjects are always moving, it can be hard to predict what will happen next. A fast continuous drive will allow you to shoot multiple images in succession so you can capture a moment within a few frames-giving you more chances of capturing the winning goal!

Many digital cameras have a built-in sports mode where the camera chooses the fastest shutter speed possible. It may also include multiple frame functions where you push the shutter button once while it fires off multiple images in succession.
**Kids and Pets**

Just like the sports player, kids and pets move around rapidly and may cause blurry image in your photographs. In addition to a fast shutter speed and a fast continuous drive, consider the types of storage you will need for your camera. If you are purchasing a slim digital camera, these can easily be slipped in and out of pockets to capture impromptu moments. With large digital cameras, consider purchasing a camera bag that allows you to access the camera quickly and efficiently. Children and pets love to play in parks, water, and anywhere that's messy! Take a look at digital cameras that are waterproof or splash proof so you can capture spectacular images without having to worry about damaging your camera. There are also waterproof cases that give you full access to all your camera functions.

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**Indoor**

The most challenging part of shooting indoors is to deal with the lighting situations. The flash on your camera can greatly help the lighting situations indoors but not used carefully, it could create harsh shadows. A high ISO camera will enable you to shoot indoors in low lighting situations without a flash. Perfect for galleries and museums or capturing candle light, the high ISO will produce sharper and brighter images indoors.
If you are shooting friends and family indoors, consider looking for a camera with a portrait mode. Often consumer digital cameras come equipped with Face Detection technology that automatically searches for faces and focuses them for the perfect portrait!

Close Ups or Macro
Do you spend lots of time in your garden or like to take photographs of high detail close up subjects? For those that enjoy photographing close ups of flowers, insects, animals, and other subjects, choosing a digital camera with a macro setting is ideal. The macro setting will allow your camera to focus when it is only a few inches away from the object.

It’s time to get shooting!
Now that you have a better idea of what kinds of digital cameras are out there, and the features to choose from, you can make an informed decision. Consider carefully the kind of photography you plan to do, match your needs to the camera model - and then get out there and make beautiful pictures!

All Consumer Digital Cameras »