A Pixel Is Worth a Thousand Words

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Want to take great photos? Don't use your phone.

Today's smartphones, with their high pixel count, take the best photos of any generation of smartphones to date, which isn't surprising. Their improved built-in camera is one of their selling points. A smartphone may be all you need if your intention is to post pictures online for your friends and family.

But if you're printing, or if you otherwise want to create the best photos possible, you'll want a dedicated digital camera, with many types of cameras to choose from. In making the right choice, understanding the basics helps.

First, pixel count isn't everything. A pixel, or picture element, is the smallest element making up a photo. The more pixels, the more detailed the image. But some pixels are larger than others, holding more information and producing less graininess and image doubling.

Pixel size is a factor of the camera's image sensor. Dedicated digital cameras generally have bigger sensors than smartphone cameras, hence bigger pixels, and DSDL (digital single lens reflex) cameras generally have the biggest sensors of consumer-level products.

The smartphone camera, for instance, with the highest pixel count today, the Nokia Lumia 1020, offers a whopping 41 megapixels of detail. The camera on the iPhone 5s offers only 8 megapixels, but it has a larger image sensor and takes better overall photos. The Samsung Galaxy S4 offers 13 megapixels and has lots of features. All three can produce surprisingly good photos for many purposes.

As you move up the ladder from smartphones all the way to DSLRs, you also get better lenses, better firmware, and better overall engineering, which also contribute to better photos.

If you want to move up, the least expensive and easiest to use stand-alone digital cameras are compact cameras, also called point-and-shoot cameras, with pixel counts generally in the 12 to 20 megapixel range. They're small and lightweight, and as the name implies, you can simply point and shoot, though they typically provide extra controls you can optionally use. The cost is generally from $135 to $500. Top names include Canon, Nikon, and Olympus.

Compact cameras come in different varieties. Subcompact cameras fit easily in your pocket, but because of their miniaturization, they can be slightly more expensive than ordinary compact cameras. Top names include Canon and Nikon.

Superzoom compact cameras have a lens that lets you capture subjects at further distances. The optical zoom of these cameras, which is far more important than the digital zoom, generally ranges from 16x to 50x, depending on the model, with the higher the number the further away you can capture subjects. Top names include Canon, Nikon, Olympus, Panasonic, and Sony.

Rugged, waterproof compact cameras withstand drops better and are waterproof up to a specified depth. Top names include Canon, Nikon, Olympus, Panasonic, and Sony.

Advanced compact cameras have more controls for taking photos under different lighting and movement conditions and for determining exactly how your photos turn out. They're more expensive than regular compact cameras, generally from $500 to $1,300. Top names include Canon, Nikon, Olympus, Panasonic, Pentax, and Sony.

Moving beyond compact cameras, you also have different varieties to choose from. What most distinguishes these higher priced cameras is that the lenses aren't built in. This means you can remove a lens and replace it with another lens for a particular shooting situation or a particular type of subject you're capturing.

Mirrorless digital cameras lack the mirror-based viewfinder of the most expensive DSLR cameras. They're thus smaller and quieter, and they have fewer parts to break, but they still pack excellent optics, close to that of DSLR cameras. They're not as fast as DSLRs, however, and they're thus not as appropriate in photojournalism, sports, and wildlife shooting situations. Prices generally range from $450 to $1,300. Top names include Olympus, Panasonic, Samsung, and Sony.

DSLR cameras are at the top of the heap with consumer-level products in producing high-quality photos in different shooting situations. Unlike the other types of digital cameras described here, you see in the camera's viewfinder the same frame of the subject that will appear in the photo you wind up with, with the camera using a mirror and prism to make this possible.

Higher quality in DSLRs is made possible mostly with large image sensors and a variety of high-quality lenses to choose from. But DSLRs are bulkier and heavier than other cameras, and they can be more complex to use. Prices generally range from $500 to $1,800. Top names include Canon, Nikon, Olympus, and Pentax.

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