

# Tech Talk

Navigating the world of technology one gadget at a time  
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## Digital Cameras, Revisited

Volume 5, Number 4

### Introduction

It's been nearly four years since Tech Talk has looked at digital cameras, and a lot has changed since then. Cameras with over ten megapixels (10 MP) have become commonplace, memory cards are dirt-cheap, well-appointed cameras can be found for as little as \$200 and useful features make it easier than ever to take a great picture the first time.

### Do I really need to upgrade my existing digital camera?

If you're satisfied with the quality of images you're taking, there's no need to upgrade. But if your camera is three or four years old, or if you're ready to move up to a more advanced camera, then you may want to survey the marketplace.



The Panasonic Lumix LX-3 is a well-reviewed ten megapixel point-and-shoot digital camera suitable for beginners and enthusiasts.

### How many megapixels do I really need?

The number of megapixels simply refers to the number of million of pixels, or colored dots, which comprise the digital photo. Seven or eight megapixels (7 or 8 MP) are all you need unless you routinely print your pictures at 11" x 14" or larger.

Packing more than eight megapixels into a typical consumer

digital camera doesn't really help image quality much. That's not to say that you should shun 12 MP cameras, but be aware that some of what you're paying for is marketing hype.

However, if your camera has a significantly larger image sensor (the photosensitive silicon chip which is the digital equivalent of film), then more megapixels can translate into a more detailed image. The camera review sites listed in the resources section will note cameras with larger than average sensors. Fortunately, the megapixel race seems to have slowed somewhat as manufacturers are paying more attention to features and image quality than the number of pixels.

### **What features should I look for in a digital camera?**

Not all features on digital cameras are helpful. Digital zoom is a perfect example of a feature which provides little benefit. To give the appearance of zooming, it crops the image inside the camera, effectively decreasing the picture's resolution. Therefore, your \$350 8MP camera turns into a 2MP camera. Optical zoom, in contrast, is a useful feature which doesn't negatively impact resolution. Here are some other valuable features:

**Image stabilization** works by counteracting movements in your hands and body, making it less likely that your image will be blurry. This feature has become quite popular in the last two or three years and is available even in modestly priced cameras. It can make a huge difference in image quality, but is only useful in reducing the effect of movement in your body, not in the movement of your subject. In other words, if your grandson is running across the lawn, this won't do anything to stop the action.

**A large and sharp LCD viewfinder** on the back of the camera makes it easy to compose your photos without squinting. A viewfinder which pivots and tilts can make it easy to snap shots while holding the camera at arms length, or even over your head. If possible, try to see how the viewfinder performs in sunlight. Some wash out completely making it difficult to frame your shot.

**A variety of shooting modes** gives the photographer more control over the image, rather than relying on a single mode to calculate the best approach to a scene.

Intermediate-to-advanced users may prefer cameras which offer aperture and shutter priority modes in addition to the fully automatic ones.

### What common flaws in cameras should I try to avoid?

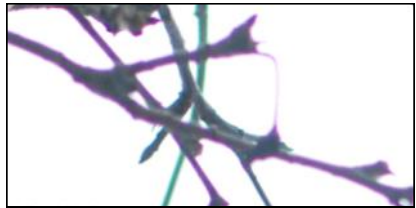
A **poor lens** can relegate an otherwise fine digital camera to mediocrity, so be careful to avoid a dud in this area. Professional reviews will often discuss the quality of the camera's optics and mention flaws. Here are some of the hallmarks of a poor lens:

- *Purple Fringing*: In backlit scenes of high contrast, some lenses have a tendency to have a purple halo around dark edges (such as bare tree branches against an overcast winter sky). This is a form of flaw known as chromatic aberration.
- *Distortion*: Lenses with this type of flaw show curves in lines where none exist in real life. It comes in two common types: barrel distortion and pincushion distortion. In barrel distortion, a regularly spaced grid will appear to bulge outward in the center, while in pincushion distortion, the center appears to be recessed.

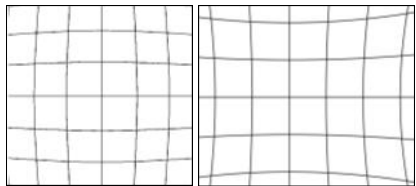
**Excessive noise** in images is becoming a problem as manufacturers cram extra megapixels into the tiny image sensor. Noise appears most often when you use a high ISO setting (400 speed or higher)



Different camera modes are often accessed using the control dial. On this model, A and S indicate aperture and shutter priority modes.



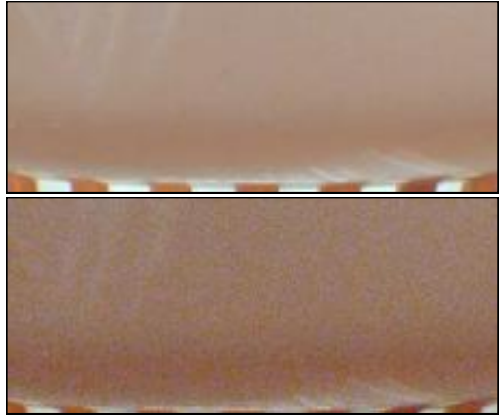
An enlarged image showing purple fringing.  
Image credit: [upload.wikimedia.org/wikipedia/en/b/be/Chromatic\\_aberration\\_1\\_14\\_2009.jpg](https://upload.wikimedia.org/wikipedia/en/b/be/Chromatic_aberration_1_14_2009.jpg)



Barrel (left) and pincushion (right) distortion make straight lines appear as curves in a photo.  
Image credits: [upload.wikimedia.org/wikipedia/commons/5/5b/Pincushion\\_distortion.svg](https://upload.wikimedia.org/wikipedia/commons/5/5b/Pincushion_distortion.svg)

[upload.wikimedia.org/wikipedia/commons/6/63/Barrel\\_distortion.svg](https://upload.wikimedia.org/wikipedia/commons/6/63/Barrel_distortion.svg)

in order to take a picture in low light. Some modern cameras try to fix this problem inside the camera by implementing *noise reduction algorithms* which remove speckles from images before they are saved to the memory card. While a good idea in theory, the resulting images appear slightly out of focus and lack detail. It's preferable to find a camera which doesn't generate much noise in the first place.



The noisy image (bottom) has a speckled, grainy appearance in contrast to the version above it. Noise problems emerge when susceptible cameras are set to a high ISO.

## Conclusion

It's a great time to buy a digital camera, as prices are reasonable for full-featured models which produce great pictures. As long as you do your homework before buying, you're likely to find a camera which will serve you for years to come.

## Resources: Camera Review Websites

- [DPreview.com](http://DPreview.com)
- [DCresource.com](http://DCresource.com)
- [Steves-digicams.com](http://Steves-digicams.com)
- [Imaging-resource.com](http://Imaging-resource.com)

If you have questions, comments or suggestions, you can visit me at the Reference Desk, contact me via email ([moetting@hinsdalelibrary.info](mailto:moetting@hinsdalelibrary.info)), or call me at 630-986-1976x225.

Mike Oetting, Reference Librarian  
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