



Stump the PC Club is a free tech-advice column written by members of the **North Orange County Computer Club**, which has been in existence since 1976. Visit the club's site at [noccc.org](http://noccc.org).

**QUESTION:** I'm about ready to buy an additional memory card for my digital camera. How do you tell what speed to buy and does it make a difference.

**PC CLUB:** Memory cards are getting faster and you do pay for performance. The real questions are can your digital camera take advantage of the speed and will you notice it?

Memory cards have two types of ratings, a Class rating and a Speed rating. The number in class rating — commonly Class 2, Class 4, Class 6 or, recently, Class 10 — refers to the rate of megabytes transferred. For example, a Class 2 card moves a minimum of two megabytes of data per second, while a Class 10 card can transfer a minimum of 10 megabytes per second. The class rating refers to the minimum sustained speed at which the card can continuously record video data. While this may not mean much for snapping random pictures, the sustained transfer rate is more important for camcorders and cameras that can shoot movie clips.

**32GB SDHC CLASS 10 Patriot PSF32GSDHC10**  
PATRIOT:  
**FRYS.com #: 5982934**  
Patriot LX Series 32 GB SDHC Class 10 Flash Memory Card PSF32GSDHC10 (Black)



**\$54.99**

The speed rating, on the other hand, looks something like “up to 15MB/s Read, 9MB/s Write” in the card's fine print. These numbers refer to the maximum transfer speed for data being read and written to the card. Read speed (in this example, 15 megabytes per second) determines the amount of time it takes to transfer photos and videos from a memory card to the computer. Write speed (9 megabytes per second in this example) refers to how quickly data can be recorded onto the card from the camera. Speed rating may also be specified with an X rating such as 10X. 1X is equivalent to 0.15 MB/s (Megabytes/second) so 10X would be 1.5 MB/s.

There are several factors that affect the apparent speed of a memory card in addition to its native speed. These factors include the camera electronics, the card reader if you use one and to some extent,

the speed of your PC. As far as the camera is concerned, some cameras are designed to take advantage of the latest memory card speeds and some are not. Even after reading the camera manual you may not be able to find out what you need to know. If your manual doesn't specify these ratings, call the camera manufacturer and ask them what maximum speed you can use or try searching the Internet..

For more information on card speed, visit <http://bit.ly/memorycarddb>. If you select the Nikon D90 in the upper right and review its performance, you'll see that a card with a 30MB/s (megabytes per second) rating actually performs at 18 to 20 MB/s. The slower cards can perform at 1/6 of that speed. These results are for a SanDisk Extreme III card.

Here are the results for the SanDisk Extreme III when using a card reader, the card slot on the front of my PC and a slot in my printer.

- Card reader – 2 MB/s
- Slot on the front of PC - 10 MB/s
- Card slot on printer – 3 MB/s

What makes it more confusing is that all card readers are not created equal. You can download a utility that can test the speed of hard drives and memory card readers at <http://bit.ly/hdtunefree> . Look for the free version which will only test the read speed. I have an older memory card and it's rated to transfers photos at 2 MB/s and HD Tune results were 1.8 MB/s.

**Recommendation** - for current Digital Cameras, a 66x card - such as SanDisk's Ultra-II line - is quite sufficient for getting optimal operating speed from your camera. If you look online at SanDisk at [http://kb.sandisk.com/app/answers/detail/a\\_id/1111](http://kb.sandisk.com/app/answers/detail/a_id/1111) you'll notice that they just increased the speed ratings to 100x or 15 MB/s. These ratings are a moving target. A real hard-shooting Professional Photographer with a top-end DSLR might, on rare occasion, hit the point where they would need a faster card (such as the 133x rated SanDisk Extreme-III series, now 200x) to avoid any buffer delays in the heat of battle. The rest of us will never notice the difference, because our cameras won't write faster than the card will take it.

Ed Schwartz is a member of the North Orange County Computer Club. To send in a question, go to [edwardns.com](http://edwardns.com) and click the Contact Me menu. Archives of previous columns are also on the website.