



Many of our members not only enjoy a day out driving their MX-5 – they also like to record that day for posterity.

With the Club calling for members to submit photographs for the 2015 calendar it might be timely to have a look at photography and how you get that best shot. Naturally which camera you decide to use (or buy) will depend on your intended use and budget; however, this *basic* guide may help you avoid many of the pitfalls.

To understand fully how to take great photos you have to first understand what photos are. The word *photography* comes from the Greek – *photos* and *graphos*, literally translating to *light writing*. When you action the shutter you capture light which, depending on the intensity and frequency, creates an image on your film (or digital sensor), it is all about the light!

Megapixels

This is the biggest con of the digital age. If you listen to the advertising hype they will attempt to convince you that a 10MP camera will take a photograph with double the quality of a 5MP camera ... but nothing could be further than the truth. What the megapixel count tells you is how large the resulting file will be, not the quality of the image. In the real world most people will not have any need for more than 6MP ... unless you intend doing some very serious cropping.

key to taking good clean photos.

When you compare the data of a smart phone and a digital single-lens reflex camera (DSLR), it quickly becomes abundantly clear which is going to collect the most light and therefore produce the better image, even though they have the same claimed pixel count (resolution). A 6MP 1/2.5 inch sensor in a smart phone has photosites with a surface area of 2.045 x 2.045 microns. When you compare that to a 6MP DSLR camera with photosites 7.880 x 7.880 microns, it's obvious which is the one to use.



As you can see from the chart below, a smart phone sensor – or even the sensor in a compact camera – is minute compared with the sensor in a DSLR. The *Samsung Galaxy SII* (smart phone) has a sensor 4.54 x 3.42mm, the *Lumix DMC FH1* (compact) is 6.08 x 4.56mm compared with the *Nikon D7000* (DSLR) at 23.60 x 15.80mm. Clearly, in a situation where size does matter, the DSLR with its larger sensor (and photosites for a given resolution) will produce a much clearer, more detailed image.

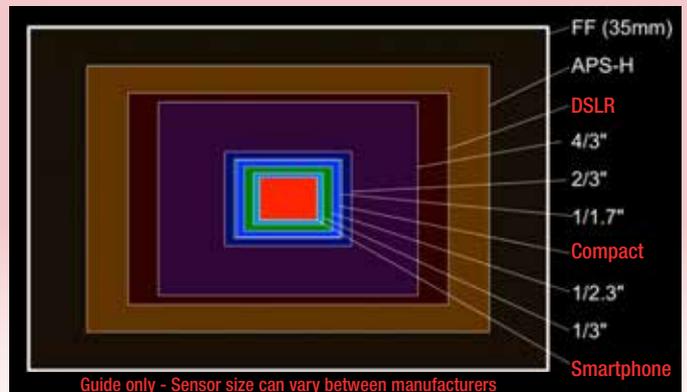
Camera resolution (megapixels)	Image size (pixels)	High-quality prints (inches)	Acceptable quality prints (in)	Screen or internet viewing
6	3000 x 2000	11.7 x 16.5 (A3)		High quality
5	2592 x 1944	10 x 13	13 x 19	High quality
4	2272 x 1704	9 x 12	12 x 16	High quality
3	2048 x 1536	8 x 10	10 x 13	High quality
2	1600 x 1200	Nil	8 x 10	High quality

A very good example of the *megapixel BS* is to look at the Nikon D4 professional camera which retails (without a lens) for around \$7000 and *ONLY* has 16.2 megapixels. If a pro can produce great images with a D4 then why would an amateur need 24.2 megapixels (D3200)? The simple answer is “they don’t”; the key to the quality of image produced by the D4 is not its resolution but its sensor size (36.00 x 23.90mm), as explained below.

So why do camera manufacturers keep bringing out cameras with more and more megapixels? The answer is simple: *so you will fork out for the new model camera which is basically exactly the same as the camera you now own (and will do exactly the same job)*. In fact often, by adding more megapixels to a sensor (in particular micro sensors), you *reduce* the quality of the image due to decreased sensitivity and increased “noise” because the amount of light collected by these smaller pixels is less (remember, it’s all about the light). This is why you often see cameras on E-bay with 4 zillion megapixels for only \$10 ... *avoid them like the plague!*

Sensors

Far more important than the megapixel count is the size and quality of the camera’s sensor. *This is where so-called smart phones just don’t make the grade*. Sensors are made up of a grid of “photosites” – and the quality and size of the photosites is the



Lenses

The other important thing to consider is the lens. This is again where the smart phone struggles: tiny lens + tiny sensor = very little light captured (in comparison with a dedicated camera).

Another trap for the unwary is so-called digital zoom; this is just another advertising gimmick designed to impress those who don’t know what it means. With a traditional *optical zoom*, the lens moves in and out to magnify the image (much like a telescope or binoculars). With *digital zoom*, which is often advertised at a massive 40X, all that happens is the camera uses software to take your photo and blow it up to 40 times its actual size. This is no different from you doing exactly the same thing in Photoshop or some other photo editing software ... the result, as you can imagine, is *atrocious*.

Lenses come in a wide range of prices from budget to “OMG how much?”. As with a helmet, always buy the best quality “glass” you can afford – it will be well worth it in the long run. ●

Next month: Smart phone / Compact / DSLR comparison