

## Random Helpful Bits and Pieces

### **When taking a picture:**

- Viewfinder adjustment: Allows adjustment so that the viewfinder image appears sharp regardless of whether you wear glasses or not
- Viewfinder grid lines: Normally available via a custom function. Can be used to make sure the camera is level and also aid composition.
- Virtual Horizon - useful particularly with landscape and architectural photography to ensure that horizons are level and uprights vertical
- Turning auto flash off in Programme mode: allows long exposures at night without the flash going off

### **When reviewing an image:**

- Histogram: a graphical representation of the "tones" present in an images, with black on the left, white on the right and gradation of tones between
- Highlight "Blinkies": flash on and off to highlight areas of an image that are over-exposed.

## Lenses

Whether permanently fixed to the camera or interchangeable, lenses come in a variety of "focal lengths". Some are fixed (single) focal length others zoom lenses.

where the focal length is:

around 50mm:	the lens is referred to as a "standard" lens because the "angle of view" it covers is similar to that of the human eye
less than 50mm	(eg 24mm, 35mm) the lens is referred to as a "wide angle" because the angle of view is wider than that of the human eye - and makes things appear further away. The smaller the number the further away things will appear
greater than 50mm	(eg 135mm, 200mm, 300mm) the lens is referred to as a "telephoto" lens because the angle of view is less than the human eye and makes things appear closer. The larger the number the closer things will appear.

Typically (but not always) wide angle lenses are often used for landscape photography and telephoto lenses for sports or wildlife photography.

Zoom lenses come in a variety of focal length ranges covering just wide angle, just telephoto or across the range of both

eg. 18-35mm, 24-135mm, 70-300mm, 80-400mm.

Zooms can appear to be an ideal choice to cover a number of eventualities, particularly for everyday or travel photography but generally have smaller maximum aperture or a variable aperture or are bulky and expensive when the maximum aperture is relatively wide

Specialist lenses eg "macro", "tilt and shift" are also available.

### **Image Stabilisation**

Depending on camera manufacturer:

- May be integrated in the lens or camera - or both.
- Different options available for use with stationary or moving subjects.
- Sometimes shouldn't be used when camera is locked down tight on a tripod.

Image stabilisation helps in reducing camera shake, particularly when using slow shutter speeds and or big lenses. It will not help with subject movement though

**Tip:** where you don't have the luxury of image stabilisation you can always adopt the following to minimise the likelihood of camera shake:

- use a shutter speed longer than  $1/\text{focal length of lens in use}$ .  
ie if focal length = 500mm,  
use a shutter speed of at least  $1/500^{\text{th}}$  second.

The above worked well in pre-digital days and some now recommend using the following:

- use a shutter speed no longer that  $1/\text{focal length of lens} \times \text{sensor crop factor}$  See below)  
ie if using a 500mm lens on a Nikon DX cropped sensor camera (x1.5 crop)  
use a shutter speed of at least  $1/500^{\text{th}} \text{ sec} \times 1.5 = 1/750^{\text{th}}$  second

### **Sensor Size and "Crop Factor"**

A quick explanation as we haven't covered this elsewhere:

1. In the good old days of film, a traditional single lens reflex (SLR) camera used "35mm film" which provided a negative (or transparency) sized at 36mm x 24mm.
2. When digital SLR's were introduced those with a sensor the same size as 35mm film (ie 36 x24mm) were called "full frame"

3. Often digital cameras have a sensor smaller than this and are referred to as cropped sensors :

eg:

Nikon DX	x1.5 crop,
Canon APS-C	x1.6 crop,
Olympus Micro Four Thirds	x2.0 crop, etc

4. So why called cropped? Because the sensor is smaller it represents a smaller or "cropped" area compared to the full frame equivalent.
5. A cropped sensor is equivalent in size to only the central area covered by a full frame sensor and so provides an image which appears magnified when compared that from a full frame sensor camera if using the same focal length lens.

The x1.5/x1.6/x2.0 etc refers to the "magnification effect" on lens focal length that the sensor creates when compared to the same lens used on a full frame sensor.

So - a 100 mm lens on a full frame camera has a field of view similar to that of

- A 150mm lens on a x1.5 cropped sensor camera
- A 160mm lens on a x1.6 cropped sensor camera
- A 200mm lens on ax2.0 cropped sensor camera

#### 6. Benefits

- useful for wildlife sports photographers as telephoto lenses suddenly have "more reach".
- Cropped sensors are generally cheaper and easier to produce and are therefore more often than not used in consumer/semi professional cameras

#### 7. Disadvantages

- Annoying for landscape photographers as your wide angle lens now doesn't give such a wide angle of view
- Generally speaking cropped sensors become noisier (ie image quality reduces) at lower ISO than full frame sensors.

8. Bottom line - not really something to get too hung up over because as amateurs we all tend to buy a camera based on a number of criteria important to us.

Often price point is near the top of the list and for most sensor size isn't probably a high priority item