



Understanding the basics of photography.

Photography is all about capturing light – and through adjusting various settings on the camera we control how much light we allow into the camera which in turn affects the final image.

It can be very easy with photography to get bogged down and confused with detailed elements. Ultimately though, the basis of all photography is built around just three settings.

In this guidebook, the three fundamental elements will be explained and how they affect the image overall.

Helpfully, cameras have a built in tool to help you achieve the right camera settings. The light meter from now on is your best friend!

A word of warning though, the light meter can get fooled thinking there is too much light available when it takes its reading of a predominantly white background. Whilst on the opposite side of the scale, it can be fooled into

thinking there isn't enough light to achieve the correct exposure.

However, fear not, by following the information in this guide, and practicing with your camera you will gain the skills and knowledge of what to do to counter this and achieve the desired exposure for your pictures.

The journey of light through a camera.

When light hits an object, that object absorbs some of the light and reflects the rest.

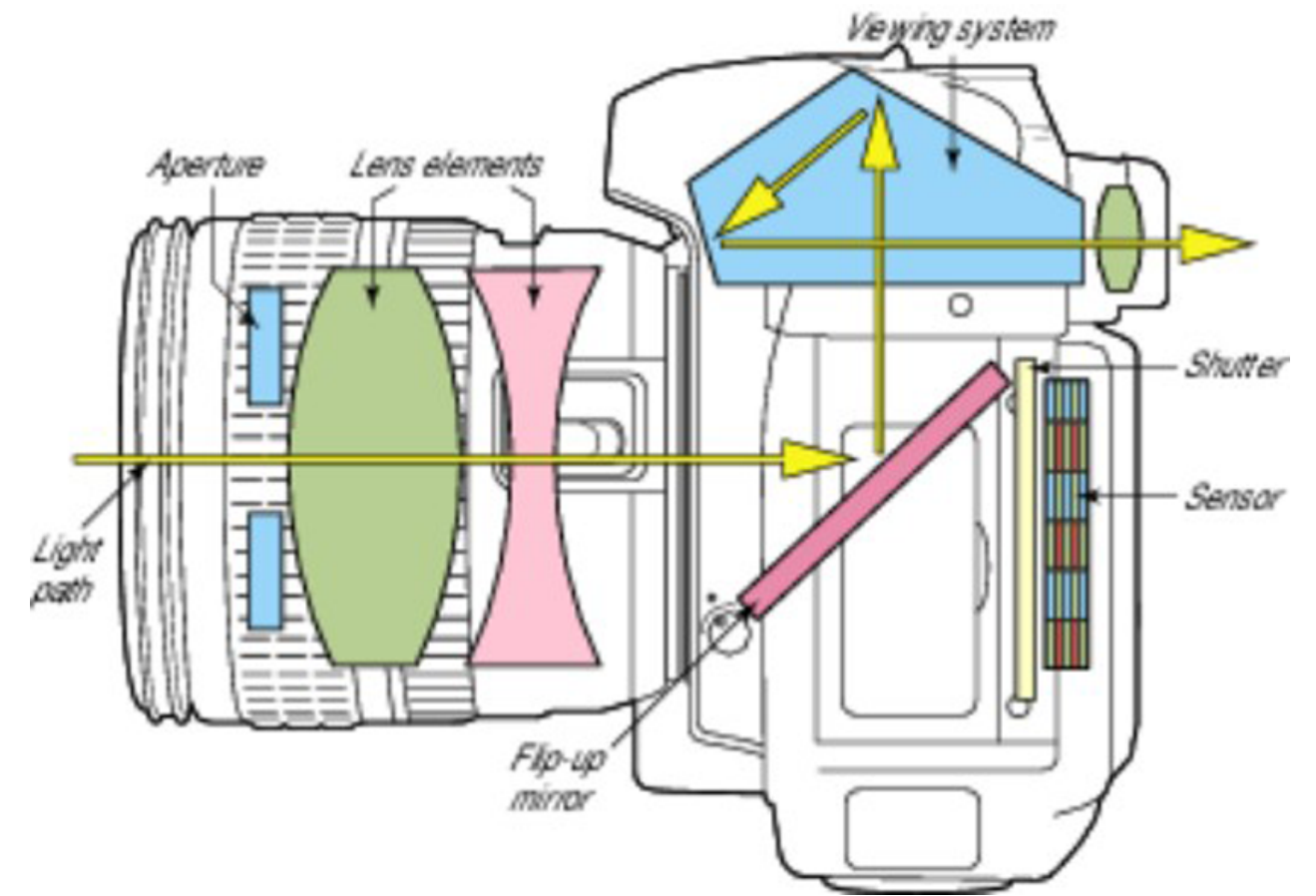
The amount of light absorbed and reflected differs based on the object. The amount of light that is reflected dictates the colour we see the object as.

A camera captures the reflected light waves to create a picture.

The example image on the right hand of this page shows a digital single lens reflex (dSLR) camera. The process for different cameras, such as mirrorless and bridge cameras work in similar ways, but don't have a physical mirror.

As light enters the lens, the mirror bounces this light up into the prism at the top of the camera. The Prism moves the light around so the image is visible through the camera's viewfinder.

When the photographer presses the shutter button the mirror lifts up and allows the light entering into the lens to hit the sensor at the back of the camera. This sensor records the details and generates the image.



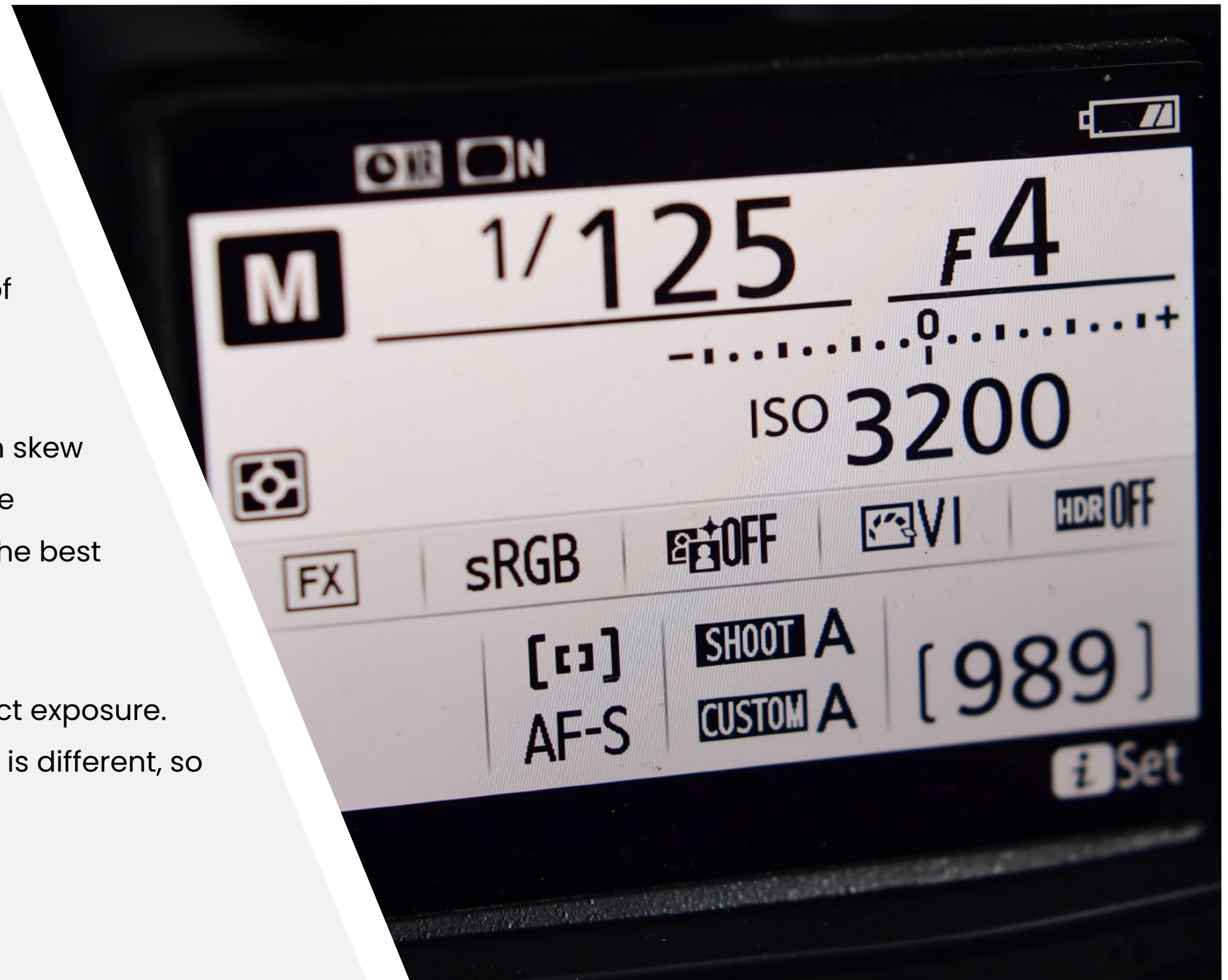
The light meter.

Whilst it might look confusing, the light meter is very straightforward. It indicates if the camera thinks there is too much, too little or just the right amount of light coming into the camera.

The idea, is that you get the marker lined up in the centre of the meter to get the correct exposure for your picture.

As explained on the earlier page, there are factors that can skew the reading. In these situations you would override what the camera is telling you and use your knowledge to achieve the best results.

There are three things that you adjust to achieve the correct exposure. The ISO, the shutter speed and the aperture. Each situation is different, so you may only need to adjust one, a couple or all three!



What is ISO?

The ISO dictates how sensitive a camera sensor is to light.

The lower the size of the ISO the more light the camera requires to achieve the correct exposure. For example, you might use 200 ISO whilst taking a photograph outside on a bright sunny day.

You may use 1600 ISO on a dull cloudy day when there isn't the same amount of light about because of the lack of sun!

The quality of digital cameras have improved over the years, however, it is worth baring in mind that the quality of the overall image can be affected by noise on the image as you increase the ISO.

Increasing the ISO will give you a brighter image.



Mastering shutter speed.

The shutter speed controls the amount of time light is allowed to hit the sensor for. A fast shutter speed can be tiny fractions of a second and slow shutter speeds lasting seconds!

A fast shutter speed is used to freeze movement. A slow shutter speed would be used to capture light trails.

Using a slower shutter speed will give you a brighter image.



Understanding aperture settings.

The aperture controls the amount of the picture that is in focus. The smaller the number of the aperture the less of the picture is sharp.

Whilst this is the impact on the aesthetics of the images, in terms of controlling the exposure it is important to understand that the aperture control the amount of light entering the camera through the lens.

The most confusing part of understanding the aperture, is that using a smaller number is classed as a bigger aperture. This is because elements within the lens are opened up to allow more light to travel through.

Using a bigger aperture (smaller number) will give you a brighter image.

The first image below was taken at $f/2.8$. The second image at $f/8$. The shallower depth of field draws the viewers attention into the subject, in this case the leaf at the front of the picture.

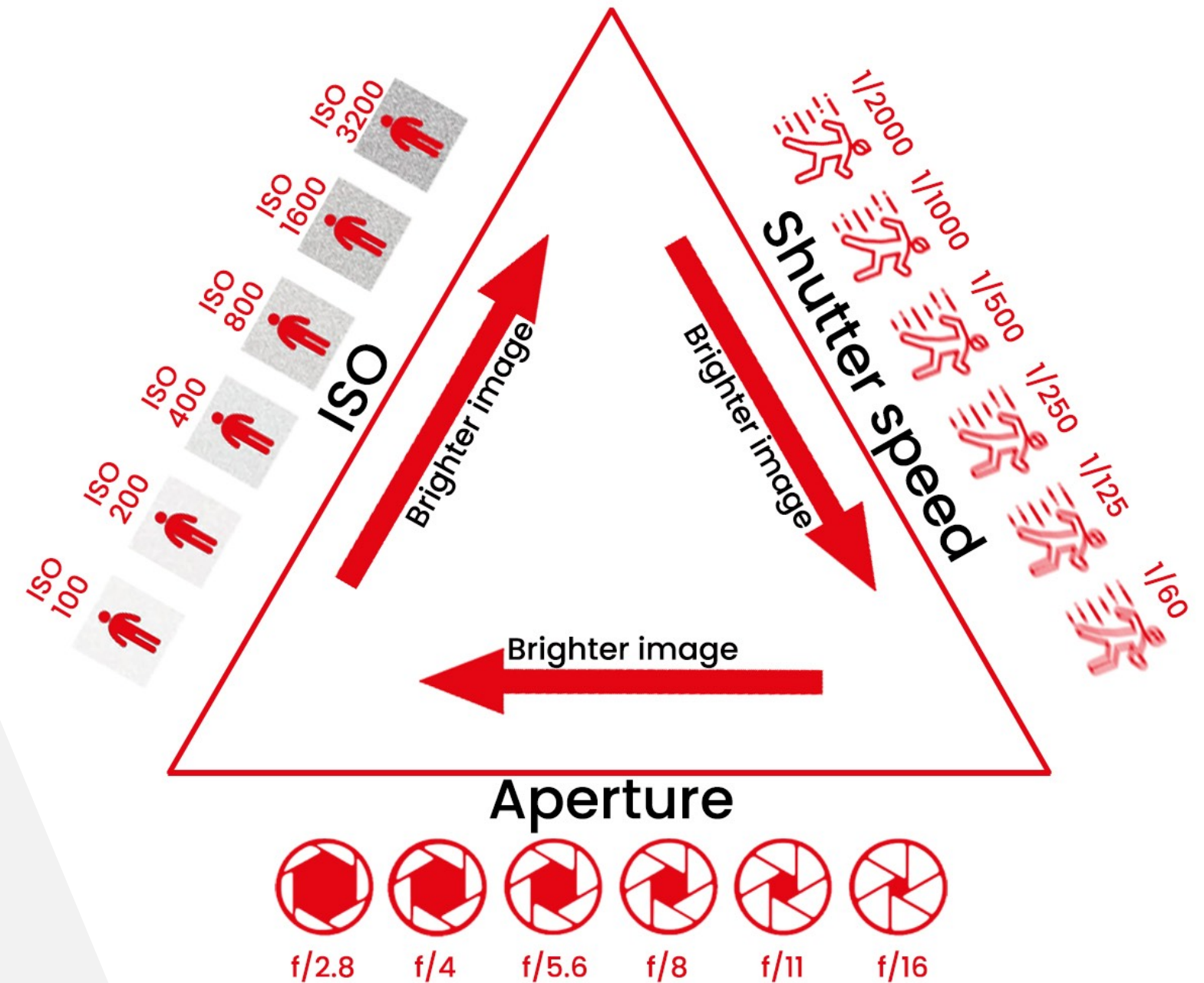


Combining the three elements.

If you think of the three elements we have looked at, ISO, shutter speed and aperture as a triangle and balancing parts of each of these three elements gives you an image that is correctly exposed.

You have to look at what is your priority for the image. Are you trying to freeze movement or capture light trails? In both of these cases your shutter speed must be your priority setting.

Likewise, if you are capturing a beautiful landscape scene then the amount of the scene that is in focus would be your priority. So for this, you would start with setting your aperture.



**What else can
impact depth of
field.**

Using the focal length (zoom) can also impact the amount of your picture that is in focus – without changing any other settings on your camera!

Taking a photograph with you lens set with a wider viewpoint will mean more of the image, behind your subject, appears in focus.

In the example on the right, the first image was taken at 24mm, whilst the second image was taken at 200mm. No other camera settings were changed. You can see how blurred the tree in the background is in the second image, compared to the first.





A bit about me...

"I see my images as a vital marketing tool which attracts attention and creates positive talking points about a company. I want to help businesses improve their corporate image through the creative photography that I produce for them - all while enjoying the experience of having their photograph taken!"



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