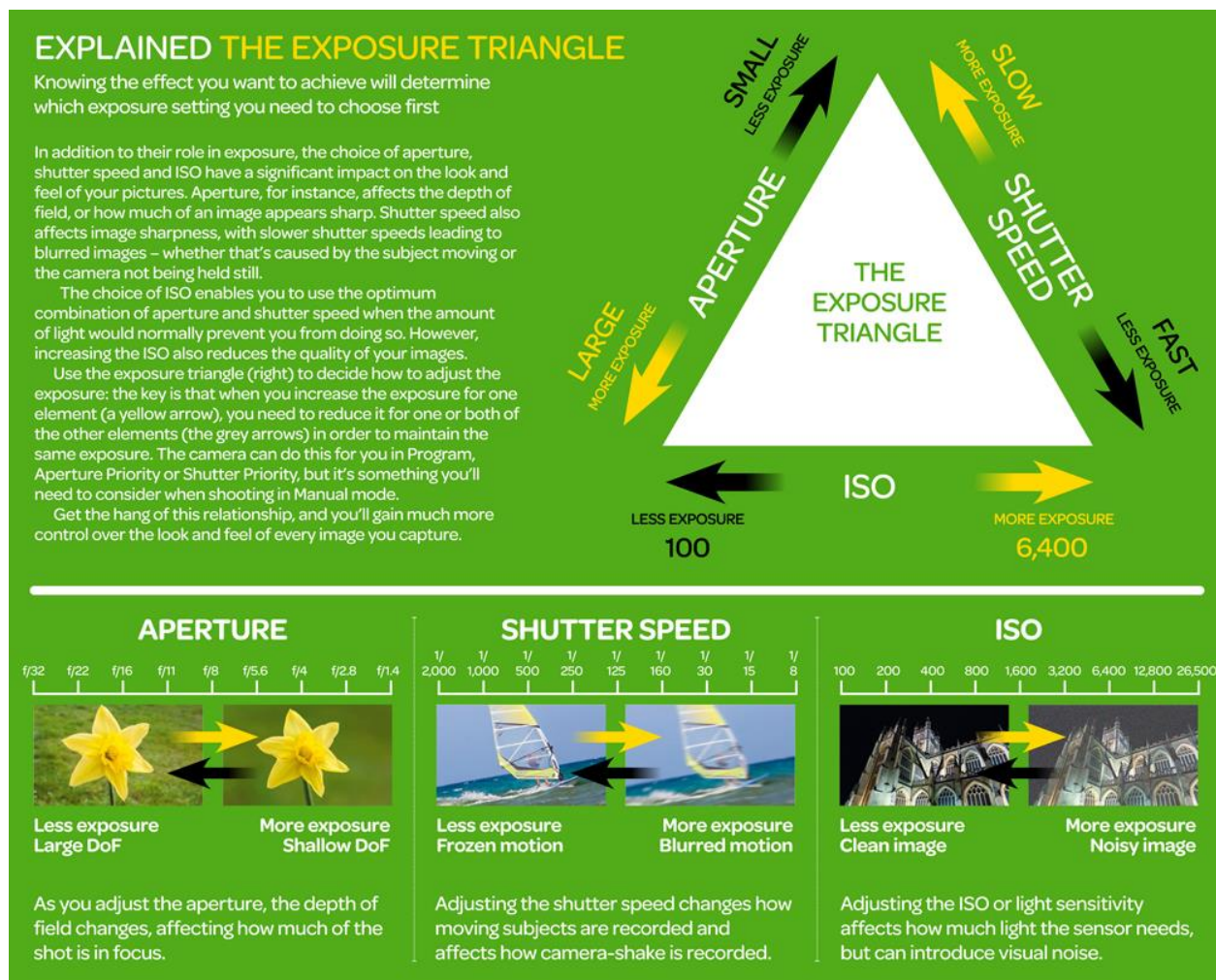


Introduction to Shutter Speed in Digital Photography



The Exposure Triangle:



The three main areas that you can adjust are ISO, Aperture and **Shutter speed**.

What is Shutter Speed?

Defined most basically – **shutter speed is ‘the amount of time that the shutter is open’.**

In film photography it was the length of time that the film was exposed to the scene you’re photographing and similarly in digital photography shutter speed is the length of time that your image sensor ‘sees’ the scene you’re attempting to capture.

Let me attempt to break down the topic of “Shutter Speed” into some bite sized pieces that should help digital camera owners trying to get their head around shutter speed:



- **Shutter speed is measured in seconds** – or in most cases fractions of seconds. The bigger the denominator the faster the speed (ie 1/1000 is much faster than 1/30).
- **In most cases you’ll probably be using shutter speeds of 1/60th of a second or faster.** This is because anything slower than this is very difficult to use without getting camera shake. Camera shake is when your camera is moving while the shutter is open and results in blur in your photos.
- **If you’re using a slow shutter speed (anything slower than 1/60) you will need to either use a tripod** or some type of image stabilization (more and more cameras are coming with this built in).
- **Shutter speeds available to you on your camera will usually double (approximately) with each setting.** As a result you’ll usually have the options for the following shutter speeds – 1/500, 1/250, 1/125, 1/60, 1/30, 1/15, 1/8 etc. This ‘doubling’ is handy to keep in mind as aperture settings also double the amount of light that is let in – as a result increasing shutter speed by one stop and decreasing aperture by one stop should give you similar exposure levels (but we’ll talk more about this in a future post).
- **Some cameras also give you the option for very slow shutter speeds** that are not fractions of seconds but are measured in seconds (for example 1 second, 10 seconds, 30 seconds etc). These are used in very low light situations, when you’re going after special effects and/or when you’re trying to capture a lot of movement in a shot). Some cameras also give you the option to shoot in ‘B’ (or ‘Bulb’) mode. Bulb mode lets you keep the shutter open for as long as you hold it down.
- **When considering what shutter speed to use in an image you should always ask yourself whether anything in your scene is moving** and how you’d like to capture that movement. If there is movement

in your scene you have the choice of either freezing the movement (so it looks still) or letting the moving object intentionally blur (giving it a sense of movement).

- **To freeze movement in an image** (like in the surfing shot above) you'll want to choose a faster shutter speed and to let the movement blur you'll want to choose a slower shutter speed. The actual speeds you should choose will vary depending upon the speed of the subject in your shot and how much you want it to be blurred.



- **Motion is not always bad** – I spoke to one digital camera owner last week who told me that he always used fast shutter speeds and couldn't understand why anyone would want motion in their images. There are times when motion is good. For example when you're taking a photo of a waterfall and want to show how fast the water is flowing, or when you're taking a shot of a racing car and want to give it a feeling of speed, or when you're taking a shot of a star scape and want to show how the stars move over a longer period of time etc. In all of these instances choosing a longer shutter speed will be the way to go. However in all of these cases you need to use a tripod or you'll run the risk of ruining the shots by adding camera movement (a different type of blur than motion blur).
- **Focal Length and Shutter Speed** - another thing to consider when choosing shutter speed is the focal length of the lens you're using. Longer focal lengths will accentuate the amount of camera shake you have and so you'll need to choose a faster shutter speed (unless you have image stabilization in your lens or camera). The 'rule' of thumb to use with focal length in non image stabilized situations) is to choose a shutter speed with a denominator that is larger than the focal length of the lens. For example if you have a lens that is 50mm 1/60th is probably ok but if you have a 200mm lens you'll probably want to shoot at around 1/250.

Shutter Speed – Bringing it Together

Remember that thinking about Shutter Speed in isolation from the other two elements of the Exposure Triangle (aperture and ISO) is not really a good idea. As you change shutter speed you'll need to change one or both of the other elements to compensate for it.

For example if you speed up your shutter speed one stop (for example from 1/125th to 1/250th) you're effectively letting half as much light into your camera. To compensate for this you'll probably need to increase your aperture one stop (for example from f16 to f11). The other alternative would be to choose a faster ISO rating (you might want to move from ISO 100 to ISO 400 for example).