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*Photography Tips and*  
*Ecuador photo tours*

## Shutter Speed

Shutter speed is a setting on your camera which controls the length of time the shutter is open, allowing light through the lens to the sensor inside your camera. Shutter speeds can go from very small fractions of a second, to several seconds long on most cameras.

If you allow the shutter to be open for too long then too much light will get to the sensor. When this happens you end up with pictures that are very pale and almost all white. This is known as being **Over Exposed**.

If you don't leave the shutter open enough you would get an **Under Exposed** image. This is because not enough light got through to the cameras sensor. So in order to compensate against lower levels of light, you would need to keep the shutter open for longer.



Cameras have an inbuilt light meter to help with this. *This is also tied in with aperture which we covered earlier. If you have a wide open aperture (small f number) then more light is allowed in, and if you use a small aperture (large f number) then less light is allowed in.*

This may seem straight forward enough, but the longer the shutter is open, the more chance there is of ending up with a blurred image. The slightest of movements while the shutter is open will register as a blurred effect. Sometimes this can be the desired effect, but most of the time you want a sharp image. Using a tripod, sitting the camera on a solid object like a wall or the floor or holding the camera against a solid object like a big tree or wall can help reduce the chances of getting blurry images. *You can also adjust the ISO to help get longer shutter speeds, we will cover ISO next week.*

**Shutter Priority** is another partly manual mode that most digital cameras will allow you to use. (aperture is the other) **Shutter Priority** is usually indicated as an **S (Nikon)** or **Tv (canon)** on the camera and it allows you to set the shutter speed while the camera will control the aperture setting.

- 1/1000 s
- 1/500 s
- 1/250 s
- 1/125 s
- 1/60 s
- 1/30 s
- 1/15 s
- 1/8 s
- 1/4 s
- 1/2 s
- 1 s (*some cameras, specially the DSLR's will have faster and shorter shutter speeds.*)

**B** (for *bulb*) keeps the shutter open as long as the shutter release is held.

### **Slow Shutter Speed**

Shutter speed is considered to be "long" or "slow" when it is slower than 1/60th of a second. (Remember, this is marked as 60 on your camera dial or display.) This numbers comes from the fact that most people can only hold a standard lens (between 35mm and 70mm) steady for 1/60th of a second or less. This is different from the commonly used term "long exposure" which usually refers to shutter speeds of over 1 second.



*6 secs, ISO 80, f4.5 manual mode. A night time shot of the coliseum in Rome with light trails of a bus. This time I was without a tripod so I placed the camera on a trash can for stability.*



*0.25 secs, ( ¼) f36, manual mode.*

### **Fast Shutter Speed**

Fast shutter speeds are generally considered to be those shutter speeds faster than 1/500th of a second. These shutter speeds are used to freeze, or stop, motion for a clear image when shooting fast subjects.



*1/1250 sec ISO 200 f/9 These are two blue footed boobies fishing at sunset.*



*1/500 sec, ISO 500 f/5.3 This is a section of the monument to the miner in southern Ecuador.*

## Rule of Thumb

A good rule of thumb for knowing the slowest shutter speed you can use with a particular lens, without using a tripod, is to use the number of the lens size. For example, a 300 mm lens can be hand held at shutter speeds of 1/300th of a second and faster. Note that the minimum hand held speed should never be below 1/60th of a second without image stabilization assistance from your camera or lens.

### Ice Skating

- Jumps - 1/250
- Open Spins - 1/350
- Tight Spins - 1/500

### Softball

- Pitched Ball Parallel to Photographer - 1/1000 (1/500 for blur)
- Pitched Ball Coming at Photographer - 1/500
- Players Catching a Ball - 1/350
- Running Players - 1/350 (depending on angle to camera)
- Players Preparing to Throw a Ball - 1/350

### Baseball

- Pitched Ball Parallel to Photographer - 1/1000 (1/500 for blur)
- Pitched Ball Coming at Photographer - 1/500
- Players Catching a Ball - 1/350
- Running Players - 1/500 (depending on angle to camera)
- Players Preparing to Throw a Ball - 1/350

### Football

- Players Running Towards Photographer - 1/250
- Players Running Parallel to Photographer - 1/500
- Cheerleader Being Tossed - 1/250

### Kids Running

- Towards the Camera - 1/180
- Parallel to the Camera - 1/250

### People Jumping

- Unassisted - 1/350
- Trampoline or with Other Assist - 1/500

### Golf

- Golf Balls Parallel to Photographer - 1/3200
- Golf Swing Parallel to Photographer - 1/2500

### Water

- Waves - 1/350
- Splash from Thrown Object - 1/1500

*Please remember these are just general guidelines and rules are meant to be broken.*

**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).

**If you're using a slow shutter speed (anything slower than 1/60) you will need to either use a tripod** or some some type of image stabilization (more and more cameras are coming with this built in).

- **Motion is not always bad** –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).



*1.25 sec (1/4) f/45 ISO 100 I blurred this shot on purpose, the f/ stop is high to get a slo shutter speed in bright light conditions.*

- **Focal Length and Shutter Speed** - another thing to consider when choosing shutter speed is the focal length (the .mm of the zoom) 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.

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).

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Challenge of the week.

DLSR and bridge camera owners. Find a subject, could be your furbaby, kids, grandkids, waterfall, cars, bikes, anything that moves, place the camera in shutter mode (S for Nikon and Tv for Canon) and take three different photos with three different shutter speeds, one fast, one medium and one slow.

Point and shooters: you can do this challenge with the presets on the camera. Try using the action preset (this will give you a fast shutter speed) and the night time/fireworks preset (this will give you a slow shutter speed) Then download the photos onto your computer and compare the exif data. (photo settings)