

Shutter Speed

Shutter Speed refers to the amount of time your film is exposed to light. Shutter Speeds are usually denoted on your camera as fractions or real numbers: 1/800, 1/600, 1/400, 1/250, 1/200, 1/125, 1/60, 1/15, 1/10, 1, 2, 4, 8, 15, 20, 30. A faster shutter speed lets less light hit your film than a slower shutter speed. For example, if your shutter speed is "1/125" that means the shutter will be open for one one-hundred twenty fifth of a second. A shutter speed of "1/60" is one sixtieth of a second, and "1" is one full second, and "30" is 30 seconds.

Shutter speed, combined with film speed and aperture, will give you an exposure. To get a perfect exposure, your aperture and shutter speed must be aligned. That means the bigger your aperture opening (allowing in more light through the lens), the faster your shutter speed (allowing it to strike the film for shorter amounts of time). In contrast, the smaller your aperture opening (allowing less light through the lens), the slower your shutter speed you'll need (allowing it to expose the film for a longer period of time) Aperture and shutter speed must balance to get a well exposed photo.

Also, a faster shutter speed typically means a "frozen" scene or photograph, whereas a slower shutter speed will allow the photo or subjects in the photo to blur. Slow shutter speeds and large aperture openings can be used together in situations where there is minimal light.

The following photographs illustrate how you can use shutter speed to capture different moments in time. Any time you take a photograph, you can choose if you want to blur motion or create a crisp image. While personal preference plays a large role, there are some standard situations where you can use shutter speed creatively.

Photo One — Very Fast Shutter Speed

The seagulls were just about to take off, and were opening their wings.

In order to freeze the motion of the wings, I had to use a fast shutter speed of 1/750 of a second.



Photo Two — Moderately Fast Shutter Speed

It was a calm day and the grass was not moving at all. I did not need to capture fast motion, and I did not want the photo to look blurry.

The shutter speed for this photo is 1/180 of a second.



Photo Three — Slow Shutter Speed

I wanted to capture this waterfall in motion, and create a blurry look for the moving water.

The shutter speed was set to 1/6 of a second.

This shot required a tripod, otherwise the greenery around the waterfall would also look blurry.



Photo Four — Very Slow Shutter Speed

This is an 8 second exposure on a street at night. This photo could not have been taken without a tripod. (Without a tripod everything, including the mailbox and the sidewalk, would be blurred from the camera movement)

The red and white streaks in the photo are the lights of passing cars. Since the shutter was open a long time, the cars passed by completely while the photo was being taken.



Camera Attached to Tripod

The background is not blurred in any of these photos. Only the moving subject begins to blur as the shutter speeds become slower. This blur illustrates motion rather than a parked vehicle.



1/250 sec



1/30 sec



1/4 sec

Panning

The technique when the camera moves along with the subject is called "Panning". The subject remains crisp while background is blurred. This technique is another way to emphasize motion.



Hand Holding vs A Tripod

When you take a picture holding the camera in your hands (as opposed to using a tripod or other stable support), your hands invariably jiggle a bit and this can blur your photograph. If you try to hand hold a shot with a one second exposure, for example, I'm *p..r..e..t..t..y* sure the resulting picture will be blurred. Nobody's hands are that steady. On the other hand, if you shoot at a shutter speed of 1/1000 of a second, the jiggle of your hands is sure to be frozen and unapparent in the image.

Image blur from shooting at too slow a shutter speed is one of the most common flaws beginning photographers face. If you wonder why all your shots are coming out fuzzy, this would be my first guess. If you learn to shoot your hand-held shots at a shutter speed fast enough to still your hand motion, your photos are likely to start looking a lot crisper.

What is this magical critical shutter speed? It depends on the focal length of the lens. Longer focal length lenses magnify everything, including the jitter from your hands, so they have more stringent shutter speed requirements than wide angle lenses. Here's a good rule of thumb for 35 mm photography:

critical shutter speed = 1 / FL,

(FL is the focal length of the lens)

That is, take the reciprocal of the focal length (1 divided by the focal length) and that's the cutoff shutter speed. Any slower than this and your photo is likely to be blurred. Anything faster is, of course, okay.

IMPORTANT: By this guideline, if you are shooting with a **200 mm lens** on your 35 mm camera, you need to shoot at **1/200 of a second -- or faster** -- to hand hold. Now most cameras don't have 1/200 as a shutter speed option, so pick something close: 1/250 will do nicely. If you are shooting with a **50 mm lens**, things are easier -- **1/50 or faster is what it takes**. Once again, cameras don't generally have a 1/50 second setting, so use 1/60 of a second (or faster). Suppose your camera has a 28 mm lens on it. The slowest hand-holdable shutter speed? Try 1/30 of a second.