

Shutter Speed

Shutter Speed

In this lesson, we'll be taking a look at
Shutter Speed.



If you see a magnifying glass at the bottom right corner of a photo, click on that photo to make it full screen.

Shutter Speed

A few points before we start looking at ***shutter speed***.

All phones have an automatic mode, where shutter speed is set automatically. In order to take *great* photos, you don't *need* to understand, much less adjust, ***shutter speed***.

However, if you do get a basic understanding of shutter speed, you'll be able to take *even better* photos.



Shutter Speed

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When you take a photo, the camera **shutter** opens to let in light, along with the image you are taking a photo of.

The shutter stays open for a certain period, then closes. The length of time it stays open is called the **shutter speed**.



Here we are looking down a camera lens - and the shutter is opening and closing, taking photos.

Shutter Speed

The shutter can stay open for as little as, say, $1/4000$ of a second. It can also open for, say, 30 seconds, or much longer.

It all depends on how much light is available, and the effect you are creating. The longer the shutter is open for, the more light enters the camera.



This shutter is opening and closing at around $1/3$ of a second.

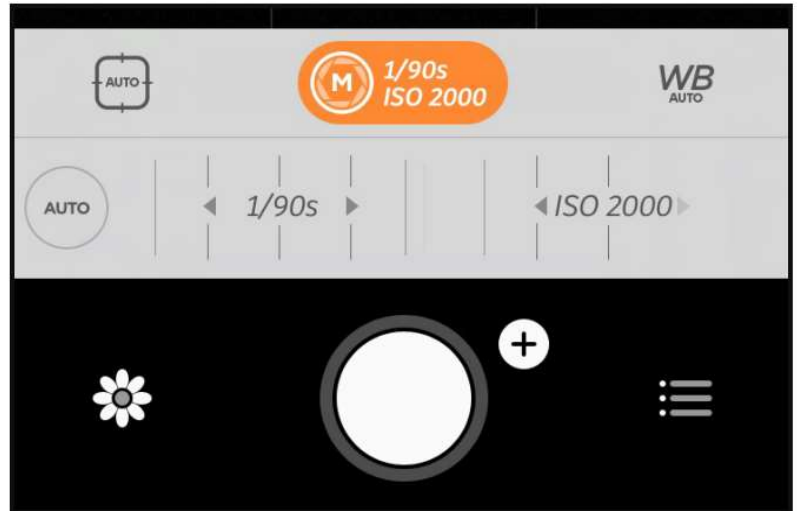
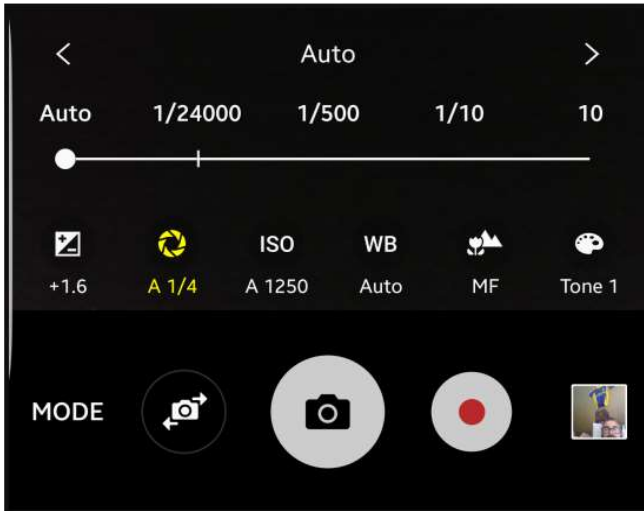


This shutter is opening and closing at around 1 second.

Shutter Speed

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Both Android and iPhones allow you to change shutter speed - with a wide variety of choices. On iOS phones, you may need to download a third party app, like **Camera +**, for more control over camera options.



Adjusting shutter speed on an Android phone, left, and on an iPhone, using the Camera + app, on the right.

Shutter Speed

A fast **shutter speed** opens the shutter only for a fraction of a second, allowing you to freeze the action. A slow shutter speed can open the shutter for 30 seconds or more, and allow you to capture in low light, or for dramatic effect.

As you'll see shortly, this can dramatically affects how the photograph turns out.



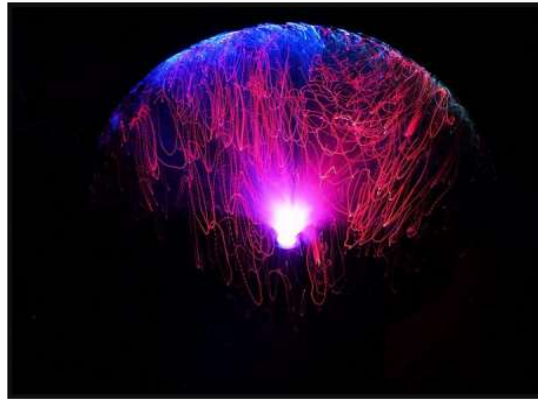
A water drop, frozen at 1/4000 of a second.

Shutter Speed

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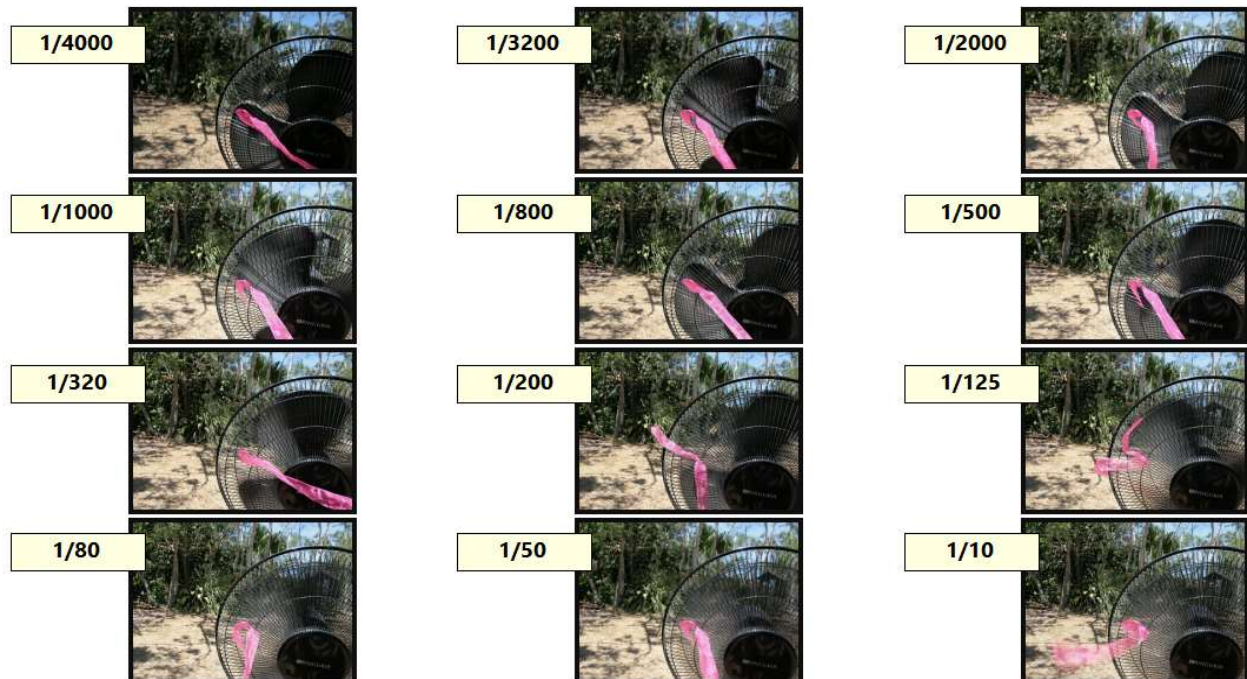
Shutter speed is measured in seconds (1 second, 2 seconds, etc), or hundreds/thousands of a second (1/1000 of a second, or 1/250 of a second, etc), or sometimes in fractions of a second (1/3 of a second, 1/2 of a second, etc.)

The shutter speed relates directly to how long the shutter is held open for. If you compare a shutter speed of 1/4000 of a second, even to an average shutter speed of 1/100 of a second - then at 1/100 of a second, the shutter is open for 40 times as long.



A shutter speed of 1 second gives a great effect to this picture.

Shutter Speed



A series of examples of different shutter speeds. Subject was a fan on full speed.

Shutter Speed

When you are taking a photo, you'll be able to select a shutter speed that you want. However, the range of shutter speeds you practically be able to use is dependent on the available light.

You can't use a 1/4000 of a second shutter speed in near dark conditions - it simply will not let in enough light. And you won't be able to use a shutter speed of 6 seconds at the beach during the day - it will simply let in too much light.



A shutter speed of 1/1600 of a second here almost freezes the bird.

Shutter Speed

Fast Shutter Speeds. Fast shutter speeds are used to capture action. They may also be used in very bright lighting conditions to prevent too much light entering the camera.

What is a fast shutter speed? It does depend on what is going on. Your phone can probably use shutter speeds as quick as 1/3200 of a second or faster. In general use, anything over 1/200 of a second could be considered fast.



Shutter speed here was set to 1/1250 of a second, in an attempt to freeze the action.

Shutter Speed



Shutter Speed

Long Exposures. Using long exposure times, between 4 and 10 seconds, allow you to get some wonderful low light shots. You'll need a tripod for this sort of exposure.



Shutter speed here was set to 10 seconds.

Shutter Speed

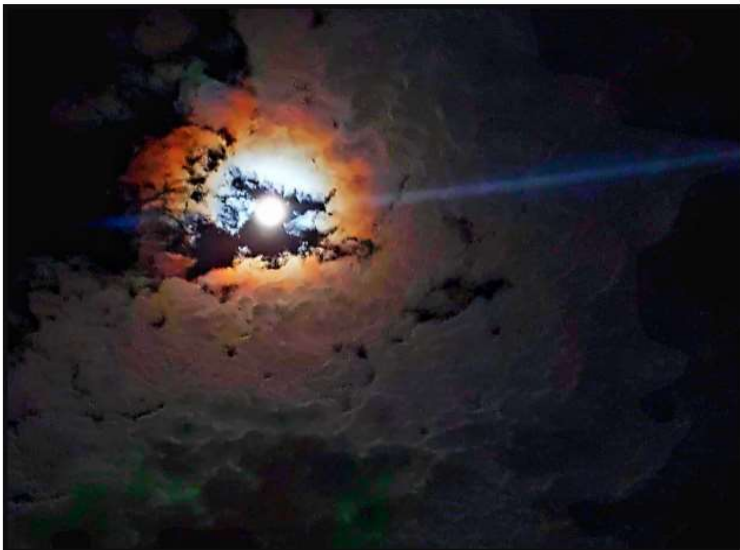
Medium Exposures. Using exposures of around a second or less - and if you are steady, you can get some really interesting shots in quite low light. Below, the subject is illuminated only by a Gameboy.



Shutter speed here was set to 1/3 seconds.

Shutter Speed

Shooting for the Moon. Getting a great shot of the moon on a phone camera can be challenging. Without any zoom - generally - the moon is pretty small. And it can be hard to get the exposure right. It is actually brighter than you think - and exposure time of less than 1/4 second is plenty - but ensure you set the focus to infinity.



Shutter Speed

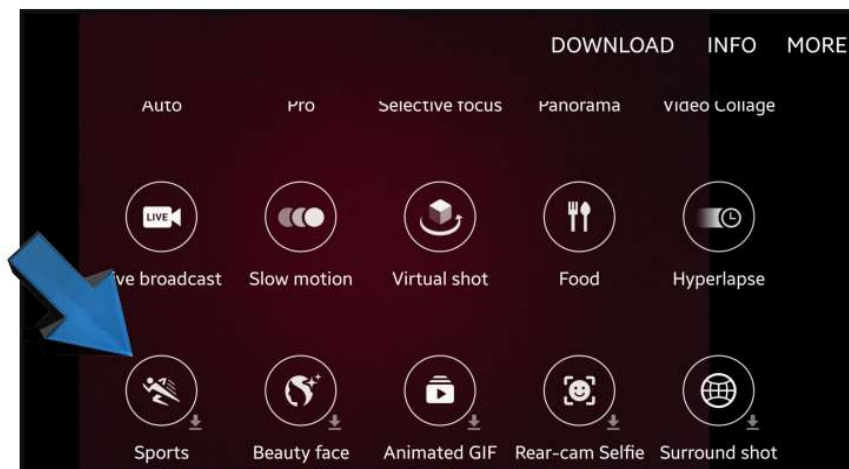
Shutter Speed



Shutter Speed

On Android phones, you may find another option in your default camera program - called **Sports**. Using this mode, your camera will try and use the fastest shutter speed it can - based on the available light.

To take photos in this mode, open the **Camera** app, and select **Mode**. Then select **Sports** (indicated), and take photos as normal.



Shutter Speed

Shutter Speed

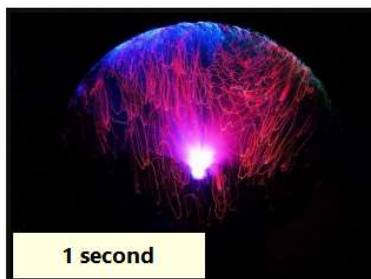
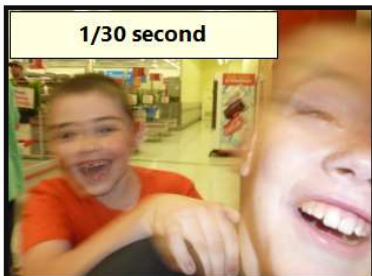
Slow Shutter Speeds. Slow shutter speeds are used to capture movement. They may also be used in very low lighting conditions to allow more light to enter the camera.

What is a slow shutter speed? It does depend on what is going on. Your phone may be able to use shutter speeds as slow as 30 seconds. In general use, anything around 1/60 of a second or less could be considered slow.



For this shot of a person running along the road with a torch, the shutter speed was set to 15 seconds. This means that all movement was captured that occurs over this 15 seconds in the one photo.

Shutter Speed



Shutter Speed



This photograph was taken at 1/10 of a second - allowing the water to 'move'.

Shutter Speed

The faster the shutter speed - the more the action is 'frozen'. This is great for sports photographs, action shots.

Fast shutter speeds require a lot of light. If you set a shutter speed to something like 1/1000 of a second, and light is poor - you are simply not going to get enough light in to take the photograph.



This photograph was taken at 1/1000 of a second - but the poor light available means the photo has come out too dark.

Shutter Speed

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The same thing will happen if the shutter speed is too slow - the camera receives too much light, and the photo is overexposed.

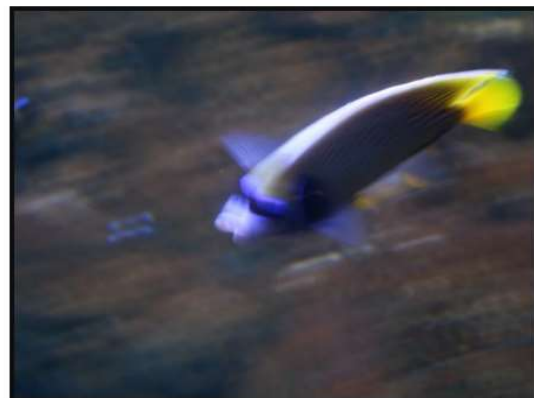


This photograph was taken at 1/6 of a second - but the bright light available means the photo has been overexposed.

Shutter Speed

If left on automatic, your camera will generally select a shutter speed of between 1/60, and around 1/500 or so, depending on available light.

There is no fixed shutter speed that is best. It depends on what you are photographing, and how much light there is. It depends on whether you are using a tripod, as slower shutter speeds almost always require a tripod.

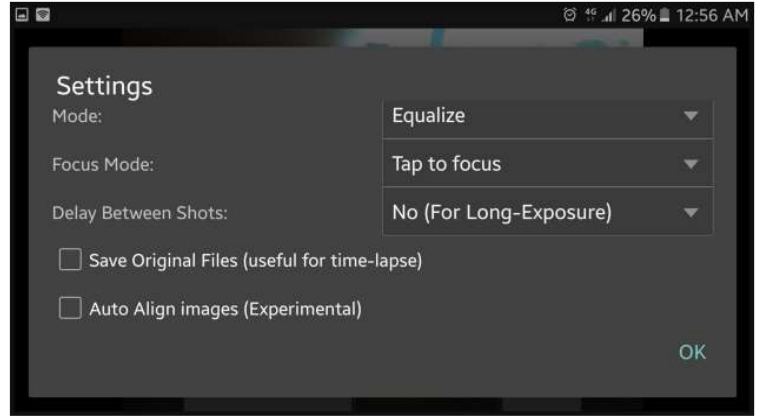
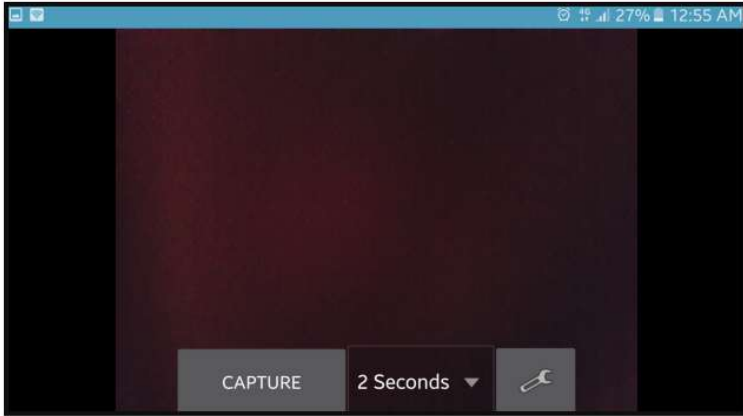


Both these shots were taken at 1/30 of a second. Movement of the camera, and movement of the subject have to be taken into consideration.

Shutter Speed

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The App stores for both Android and iPhones have a range of apps that allow you to use special settings in relation to shutter speed. For example, an app called **LE CAM** (pictured), allows you to set long shutter speeds (in fact, it simulates this by taking several photos, and averaging them together), allowing you to take some quite interesting photos.



Shutter Speed

You've now completed this lesson.

In this lesson, we took a look at **Shutter Speed**.

