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# CAMERA BASICS SERIES: SHUTTER SPEED EXPLAINED

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Quick Guide  
Written by Angela Fulks



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If I were to ask you to hold a pretend camera up to your face and take a photo, I bet you would hold the camera up and press the shutter button, right?

We are often familiar with the concept of the shutter button from a young age and know that we must press that button to take a photo.

What we may not know is exactly what the shutter button controls in our cameras and why the shutter and the speed of that shutter are so important in taking a photograph.

In this guide we will strip down the basic function of the shutter and what shutter speed is to answer the following questions:

- What is the basic function of the camera's shutter?
- What is shutter speed?
- How does shutter speed affect the exposure of a photograph?
- How does shutter speed affect motion in a photograph?
- How do we determine what the proper shutter speed should be when photographing?

 **Recommended Reading:** Want a step-by-step guide on photography skills with your DSLR? Grab a copy of our best-selling guide, the [DSLR Crash Course](#).

## THE BASIC FUNCTION OF A CAMERA SHUTTER


Every camera has a shutter inside that opens and closes when the shutter release button is pressed to expose the camera's sensor or film to light.

I like to think of the shutter as a door leading to a very dark room.

The wider you open the door to that dark room, the more light you will let in.

The amount of light that is let into the camera's sensor will determine the brightness or darkness of a photograph. This brightness or darkness is called the exposure.

You can also think of the shutter as the recording device in your camera. When the shutter is open, the image is being recorded. The recording stops when the shutter is closed.

 **Key Lesson:** The basic function of the camera's shutter is to block out light from the camera's sensor when it is closed and to allow light into the camera's sensor when it is open. There are two camera devices that determine how much light passes through to the sensor or film: the camera shutter and the lens aperture. We will cover lens aperture in another guide.




Photograph by Angela Fulks

*This image was shot at 1/15 sec.*

## WHAT IS SHUTTER SPEED?

Shutter speed is the amount of time that the shutter is open and for how long the light will be let into the sensor. Changing the shutter speed of our camera allows us to change the amount of time the shutter is open. The shutter speed is responsible for two very important elements in a photograph. These are the brightness, or exposure, of a photograph and the motion, or blur, in a photograph.

Some common terms you may hear used to describe the shutter speed are long and short shutter speed, long or short exposure, fast or slow shutter speed, and high and low shutter speed.

 **Key Lesson:** Shutter speed is how long the shutter remains open in a camera.

In the photo at left, the shutter speed was set way too slow. The bright parts of the photo are way too bright. This photo was overexposed due to the shutter speed being too slow.



Photograph by Angela Fulks

*This image was shot at 1/125 sec.*

## HOW SHUTTER SPEED AFFECTS THE EXPOSURE OF A PHOTOGRAPH

Let's think about that door leading to the dark room again. A longer shutter speed is like throwing the door wide open, allowing the light to flood in and illuminate the dark room. A short shutter speed is like slightly cracking open that door and only allowing a small sliver of light in.

**💎 Key Lesson:** Again, the slower that you set your shutter speed, the brighter your photo will be. The faster you set your shutter speed, the darker your photo will be.

In this image, the shutter speed was set faster and came closer to capturing the apples as they appeared to my eyes. The bright spots in the photo are still bright without being too bright. The dark parts of the photo are dark enough to give the photo some depth, but still show the details in the leaves.


## UNDEREXPOSURE

What would happen if you were to set your shutter speed too slow for what is necessary for the light you are shooting in? You would create a photo that is overexposed, meaning too much light was let into your sensor, and the photo would be much too bright.

The details of the photo and possibly the entire subject of your photo would be completely white and overcome with light.

If you were to set your shutter speed too fast for the situation that you are shooting in then your photo would be underexposed, meaning it would be too dark. Details of the photo and possibly the entire subject of your photo would be lost to darkness from a lack of light.

A correctly exposed photo will balance both the bright and dark areas of the subject you are photographing.

 **Key Lesson:** The shutter speed is one of three camera functions that are responsible for the exposure of the photograph. Shutter speed controls how much or how little light is allowed to enter into the camera's sensor.

The following photo was shot with a shutter speed set too fast for the scene. The bright parts of the photo have almost disappeared. The details in the leaves are also way too dark.



Photograph by Angela Fulks

*This example photo was shot at 1/400 sec.*





Photograph by Angela Fulks

*This moving child was photographed at 1/1000<sup>th</sup> of a second.*

## HOW SHUTTER SPEED AFFECTS THE MOTION, OR BLUR, IN A PHOTOGRAPH

Have you ever taken a photo and noticed that an arm, car, or another part of the photo is blurry?

That blur happens because your shutter speed was too slow to stop or freeze the motion of the subject.

Not only does shutter speed affect the exposure of your photo, but it will also determine whether or not you have any blur caused by a moving subject in your photo.

The longer the shutter is open, the more blur caused by motion you will have in your photos. The shorter the shutter is open, the less blur will be caused by motion in your photograph.

A fast shutter speed allowed me to freeze the action of my daughter shaking out her hair. Her facial features and hair remain in focus in spite of the motion of her shaking her head from side to side.





Photograph by Angela Fulks

*This example of the moving child was shot at 1/80<sup>th</sup> of a second.*

A slow shutter speed is to blame for the motion blur in this photo of my daughter shaking her head.

Although the shutter speed was sufficient enough to freeze most of her upper body, her facial features and hair are blurry. Her hair strands look unnatural with a lack of definition.

 **Key Lesson:** The motion blur from a moving subject in a photo is caused by a longer shutter speed. A freeze in the motion of a subject is made possible by a shorter shutter speed.

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Photograph by Angela Fulks

## HOW TO DECIDE WHAT SHUTTER SPEED TO USE

The great thing about photography is that it is entirely subjective.

You can take a photograph that looks however you want!

The shutter speed that you decide to use will depend mostly on your personal preferences for how you choose to present your photos to the world.

Experimenting with shutter speed is the most effective way to learn how it affects your photos!

## Self-Check Quiz:

- 1) What is the basic function of the camera shutter?
- 2) If you want your subject's movement to be sharp and not blurry, would you use a slower shutter speed or a faster shutter speed?
- 3) True or False: The shutter speed is one of two camera components that control how much light passes through to the imaging sensor or film.
- 4) Why do we think of the camera shutter as a door opening and closing to a dark room?
- 5) Does a lower shutter speed number, such as  $1/15^{\text{th}}$  of a second, let in more or less light than a higher shutter speed number, such as  $1/400^{\text{th}}$  of a second?
- 6) What is the second photography function (other than exposure) that is controlled by the shutter speed?
- 7) Which shutter speed would better freeze the motion of a subject:  $1/80^{\text{th}}$  or  $1/1000^{\text{th}}$  of a second?



## Hey there!

Let's get real for a minute... Learning photography can be super challenging! But we're here to help you every step of the way! Here are 3 of our most useful (*and FREE!*) photography resources:



### 3 Free Photography Cheat Sheets

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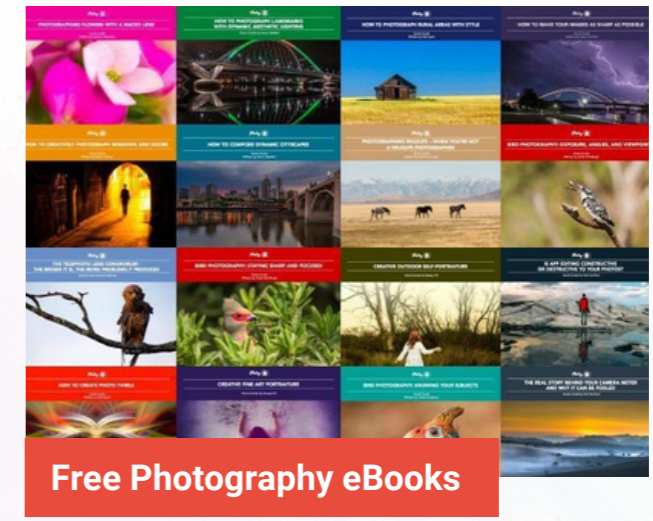
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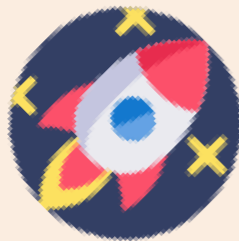
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## ABOUT THE AUTHOR



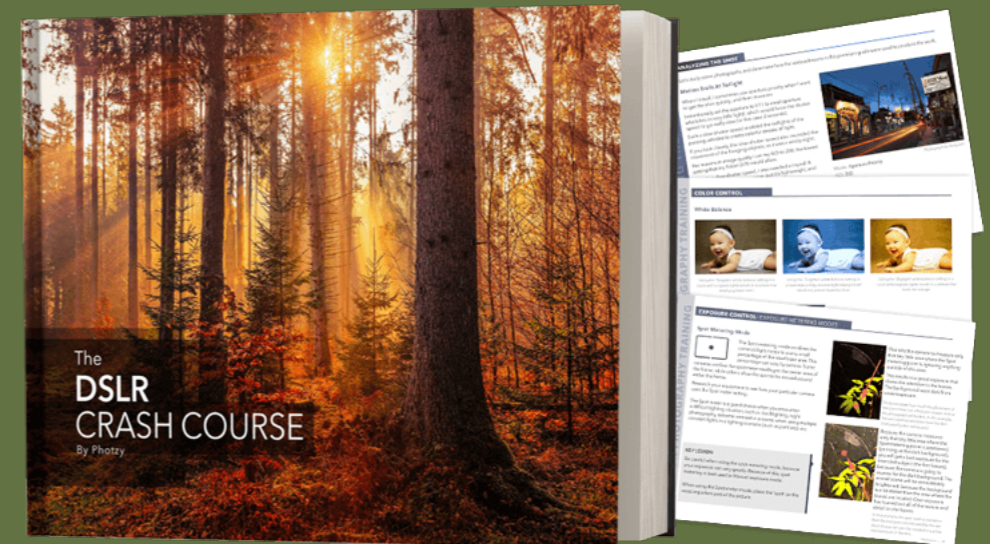
Angela Fulks is a photographer and paranormal investigator who lives in St. Louis, Missouri, with her family of seven. She photographs weddings, portraits, and all the spooky places she can find.

You can see more of her work on Instagram:

<https://www.instagram.com/angela.m.fulks/>

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