

CREATIVE EXPOSURE BY CHANGING APERTURE VALUES



GOAL

Capture photographs by varying the aperture values to understand how it affects the exposure and depth of field.

SUMMARY

Aperture is one of the three factors that controls exposure in a photograph as it controls the amount of light entering the camera through the lens and falling on the sensor. It also controls the depth of field in a photo which means the area or depth that will be in focus in the scene. In this project, we will learn how to use aperture to creatively control exposure and depth of field in a photo.



Aperture is the opening in the lens through which light enters the camera and falls on the sensor. This aperture value can be controlled using a dial in the camera or in older lenses and some recent lenses, it can be manually controlled using an aperture ring. To understand how aperture works, just think of how the human eye works when the light is too bright or too low. Its function is to regulate the amount of light that enters the eye. When the light is too bright, the iris closes the pupil to let in less light and when the light is low, the iris opens the pupil wider to let in more light.

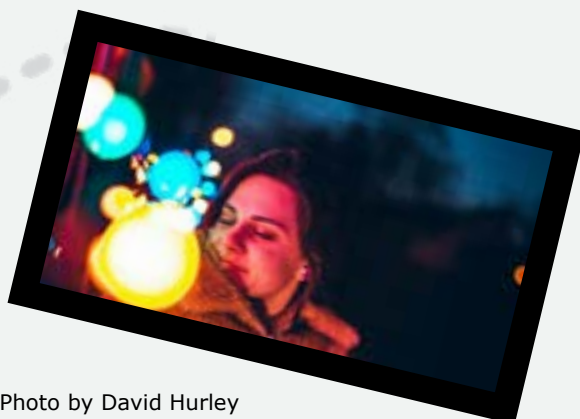


Photo by David Hurley



Photo by Jill Dimond

THINGS TO REMEMBER:

1. WIDE APERTURE



Use wider or larger aperture values like $f/1.8$ or $f/2.8$ when the light is low or when you want to have smaller depth of field.

2. NARROW APERTURE



Use narrow aperture values between $f/8$ and $f/16$ when the light is too bright or if you want great depth in the scene or more areas in focus.

3. PORTRAITS



For portraits, photographers use wider aperture values so they can have shallow depth of field with blurry backgrounds. This helps to bring focus on the subject.

4. LANDSCAPES



For landscape and architectural photography, we want to have more of the scene in focus, usually from front to back. So for maximum depth of field, one will have to choose narrow aperture values between $f/8$ and $f/16$.

5. STARBURST



Also using aperture values like $f/16$ or $f/22$ will help you to capture the sunstar or sunburst effect in photos, especially landscapes or lights at night.

6. LENSES



The aperture value can vary with lenses, so experiment to find the right value for your lens.



APERTURE AND EXPOSURE:

1. APERTURE RANGE



Photo by Light Stalking

Aperture values are denoted as f/s where f is the focal length and s is the f-stop number. Smaller f stop number means wider aperture and larger f stop number means narrow aperture. For example, f/3.5 is a wider aperture value compared to f/5.6. So aperture value of f/3.5 will let in more light compared to aperture value f/5.6.

3. PRACTICE II



Photo by Claudio Testa

Narrow the aperture by a stop which could be f/5.6. Do not change any other values. Take a shot. What do you observe? The image will be slightly underexposed. Narrow the aperture even more to f/8. Take a shot. The image will appear darker than the one above.

2. PRACTICE I

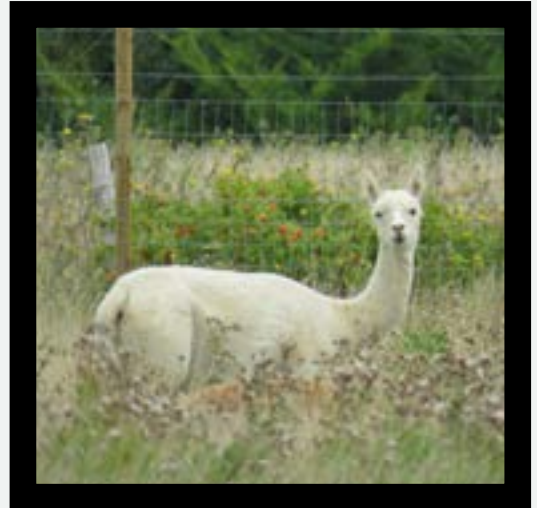


Photo by Chris

Set your camera on manual mode. Compose a scene and set up your camera with the lens to the widest aperture. This could be f/3.5 or f/4 or anything that is the widest your lens will allow. Now set the iso to the lowest like 100 or 200 and set a shutter speed to get the exposure right. For example, it could be an aperture value of f/4, iso 200 and shutter speed 1/1000 of a second. Take a shot.

4. SHUTTER SPEED



Photo by Chandler Cruttenden

This will help you to understand that narrowing the aperture will allow less amount of light into the camera. So to compensate for the loss of light, you will need to either change the shutter speed to a slower value like 1/500 or increase the iso or both.

APERTURE AND DEPTH OF FIELD:

1. DEPTH OF FIELD



Photo by Bram Laenen

Depth of field is the area or zone (depth) in an image that is in focus. Larger or wider aperture values produce shallow depth of field which means areas in the front and back of the subject are more blurry. As you narrow down the aperture, the depth of field increases which means more of the foreground and background become sharp and result in less blur.

3. PRACTICE II



Photo via Esteban Trivelli

Narrow the aperture by a stop or two and adjust the shutter speed and iso to get the right exposure. Take a shot and observe the depth of field. You will see that more areas in the image are in focus. Now, narrow the aperture even more to about f/8 or f/11. Make adjustments to iso and shutter speed to get the exposure right.

2. PRACTICE I



Photo by Gijs Coolen

Compose a scene and set up your camera with the lens to the widest aperture. This could be f/1.8, f/2, f/2.8, f/3.5 or f/4 or anything that is the widest your lens will allow. Now set the iso to the lowest like 100 or 200 and set a shutter speed to get the exposure right. For example, it could be an aperture value of f/2, iso 200 and shutter speed 1/4000 of a second. Focus on a subject and take a shot. Examine the image.

4. EVALUATION



Photo by Silvestri Matteo

Compare the above images to see how changing the aperture value will change the depth of field in an image. This helps to understand how aperture controls depth of field and how narrow aperture values can be used for sharper images and images with more depth in focus, for example like landscapes.

EXTRA TIPS:

Here are some tasks that you can try for creative exposure by changing aperture values:

- Select a subject of your choice and use a wider aperture value to make your subject stand out from the background. Capture the same subject with a narrow aperture value and see what works best for your visual appeal.
- Using a wider aperture again, include foreground elements to create blurry artistic effects to frame your subject. This will help you to understand bokeh in foregrounds as well.
- Use a narrow aperture value to capture greater depth in your image, for example architecture or landscape. Capture the same scene with wide aperture value and see which works best.
- At narrow aperture values like f/16 or narrower than that, capture a sunstar or sunburst effect. You will need to capture the sun through the edges of something like a tree, rock, building, or another subject of your choice as seen in the images below for effective results.

Photo by Joshua Earle



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