

# What is DoF and how does it effect the final image ?

## Part 1

DoF is one of the most important things for a Photographer to master. However, it can also be intimidating and is a frequent source of confusion.

Luckily though, DoF is actually a simple concept:

*Depth Of Field = How Much Of The Photo Is In Focus*

Whenever you take a photo only 1 point of the shot is perfectly focused. The rest is all blurred to some degree.

However, very slightly out-of-focus areas appear acceptably sharp to our eyes. These areas are termed: *In acceptable focus*.

Generally speaking, it's the areas of acceptable focus that are important, so let's restate our definition of DoF.

*Depth Of Field = How Much Of The Photo Is In Acceptable Focus*

That's all there is to the concept of DoF, but there's lots to learn in how to apply the theory. In today's article we will look at how Aperture affects DoF.

Aperture is simply the size of the opening of your lens.

You can vary the Aperture of your lens by using the A or Av mode on your camera. (Don't worry about what the numbers mean, just see how they affect DoF)

Let's see how changing the Aperture changes the DoF.



At  $f/2$  we can see only the label of the nearest bottle is in focus. (The focus point is the tower above the Peace Keeper name.) Even the neck of the Peace Keeper bottle is not sharp.

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By  $f/2.8$  you can see that the neck of the Peace Keeper is much sharper, and that the Chelsea Pensioner bottle is nearly focused.



At  $f/4$  the first 2 bottles are now in focus, and the text of the Wainwright bottle is almost focused, although the maker's name is not.

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At  $f/5.6$  things are becoming quite a bit clearer across the range. The first 3 bottles are pretty sharp, and the Double Header is close to being in focus. The Bluebird Bitter bottle is not much farther behind.



By  $f/8$  everything is focused, up to the Double Header bottle. Bluebird Bitter is almost there, with Tangle Foot right behind.

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As we reach  $f/11$ , all the labels are in focus, except Battle Axe. The neck of Tangle Foot isn't quite as sharp as the label.



$f/16$  and everything is pretty much in focus. Battle Axe is a touch soft, but is close to being focused.

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There's very little visible difference between  $f/22$  and  $f/16$ . The reason is diffraction, which softens images at very high  $f$ -numbers like  $f/22$ . I will talk more about diffraction at a later date.

So now we've been through the examples we can make a simple conclusion.

*The larger the  $f$ -number, the more that is in focus.*

From this, we can see that:

*To blur backgrounds, use small  $f$ -numbers.*

*To keep everything in focus, use large  $f$ -numbers*