Understanding Manual Focus

Hyper Focal & Zone Focus

This article shows you in detail how to set your cameras focus to its maximum for Infinity and Zone focus, providing, your lens has distance markers on the lens.
Many modern Digital Cameras do not have distance scales on the lens, and certainly not on zoom lens, which is a shame as the scales are very useful to use for getting the maximum Depth of Field at infinity and for Zone focus between two distances.

**From left to right**
- Distance Scale
- Infinity Mark
- Duplicated Fixed Aperture Scale
- Movable Aperture Ring
- Aperture Ring
How we set Infinity Focus to gain the maximum DOF

The lens is set to f/16, the infinity mark lines up with the f/16 on the fixed aperture scale, looking at the f/16 marks from left to right the distance of in focus area can now be read. Everything from 8 feet to infinity will be in focus.
Another example of infinity focus

This time the lens is set to f/8, the infinity mark lines up with the f/8 on the fixed aperture scale, looking at the f/8 marks from left to right, the distance of in focus areas can now be read. Everything from approximately 16 feet to infinity will be in focus. You will notice the larger the aperture the zone of focus narrows. Infinity focus is a great tool for landscape work when you want as much foreground to infinity in focus.
In this example, when your lens is set to its widest aperture, f/1.7 on this 50mm lens there is very limited DOF at all distances, the closer you focus DOF can be counted in millimetres. From f/3.5 to f/1.7 you cannot set any in focus distances on the fixed aperture scale.

The longer the focal length of a lens the DOF becomes smaller, so f/8 on a 135mm lens has a much narrower zone of focus than a 50mm lens at f/8. The wider the focal length of a lens such as a 24mm has a greater zone of focus at f/8 than f/8 on a 50mm lens.
How to set Zone Focus

This is how to set Zone focus on a lens, very useful with wide to normal lens for point and shoot or street photography, the zone of focus is set to give a range of DOF at given distance on the scale as in the example below.

The aperture is set to f/22. On the distance scale 25 feet is aligned with f/22 on the fixed aperture scale on the left, reading between the two f/22 marks on the fixed scale shows 4.5 feet to 25 feet is in acceptable focus, anything below or above those numbers will be out of focus.
Another example

The aperture is set to f/4. On the distance scale 12 feet is aligned with f/4 on the fixed aperture scale on the left, reading between the two f/4 marks on the fixed scale shows 9 feet to 12 feet is in acceptable focus, anything below or above those numbers will be out of focus. As you can see the wider the aperture the narrower the DOF.
In the days when press photographers used film cameras they often used 28 and 35mm lens on a 35mm cameras, the reason being the wider the lens the greater the DOF or zone of focus could be set, they often tapped the focus ring to a set distance, this meant that they did not need to focus the lens, you can see why in the examples below of a 28 and 35mm lens set to f/8, as long as the subject was in that zone they were in focus. This had the advantage of been able to hold the camera above head height, as long as the subject was in line with the lens they got the shot needed.
This is a 28mm lens set at f/8, the infinity mark is set on the fixed aperture scale to f/8, the DOF on this lens is massive, and reading the distances this lens has everything in focus from 4.5 feet to infinity.
This is a 35mm lens set at f/8, the infinity mark is set on the fixed aperture scale to f/8, the DOF on this lens is large, and reading the distances this lens has everything in focus from 9 feet to infinity.
This is a 135mm lens set at f/8, the infinity mark is set on the fixed aperture scale to f/8, the DOF on this lens is small, and reading the distances this lens has everything in focus from approximately 80 feet to infinity.

So you can see that the shorter the focal length the greater the DOF, the longer the focal lens the DOF narrows.