



Aperture Photography Group
Camera Skills
Depth of Field

www.aperturephotographygroup.co.uk



Camera Skills

Tonight:

- ❖ Depth of Field
- ❖ Recap the key points from the Nick Rains video
- ❖ Q&A



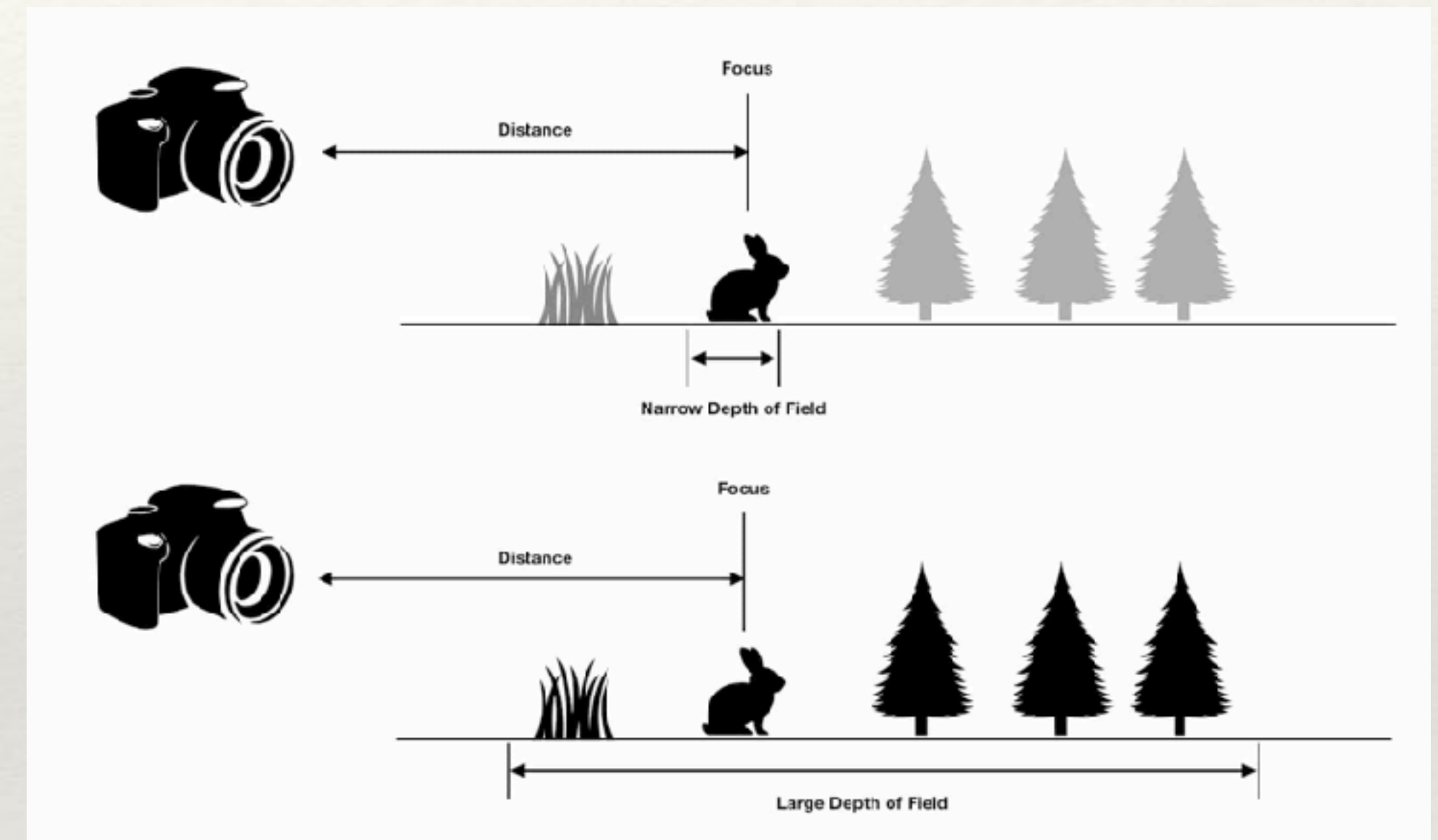
Depth of Field

"Depth of field is a key compositional element in many, if not most, photographs. It is one of the most important tools a photographer can use to create striking images."

Harold Davis, 'Creative Composition: Digital Photography Tips and Techniques'

Depth of Field - What does it mean?

- ❖ DOF is the distance between the closest objects in focus and the farthest point of focus.
- ❖ DOF is a complete illusion, only your focus point is in focus.
- ❖ There is no sudden cut-off between element that appear sharp and those that aren't.
- ❖ 'Apparent' depth of field is the region between the nearest and farthest point that is acceptably sharp.



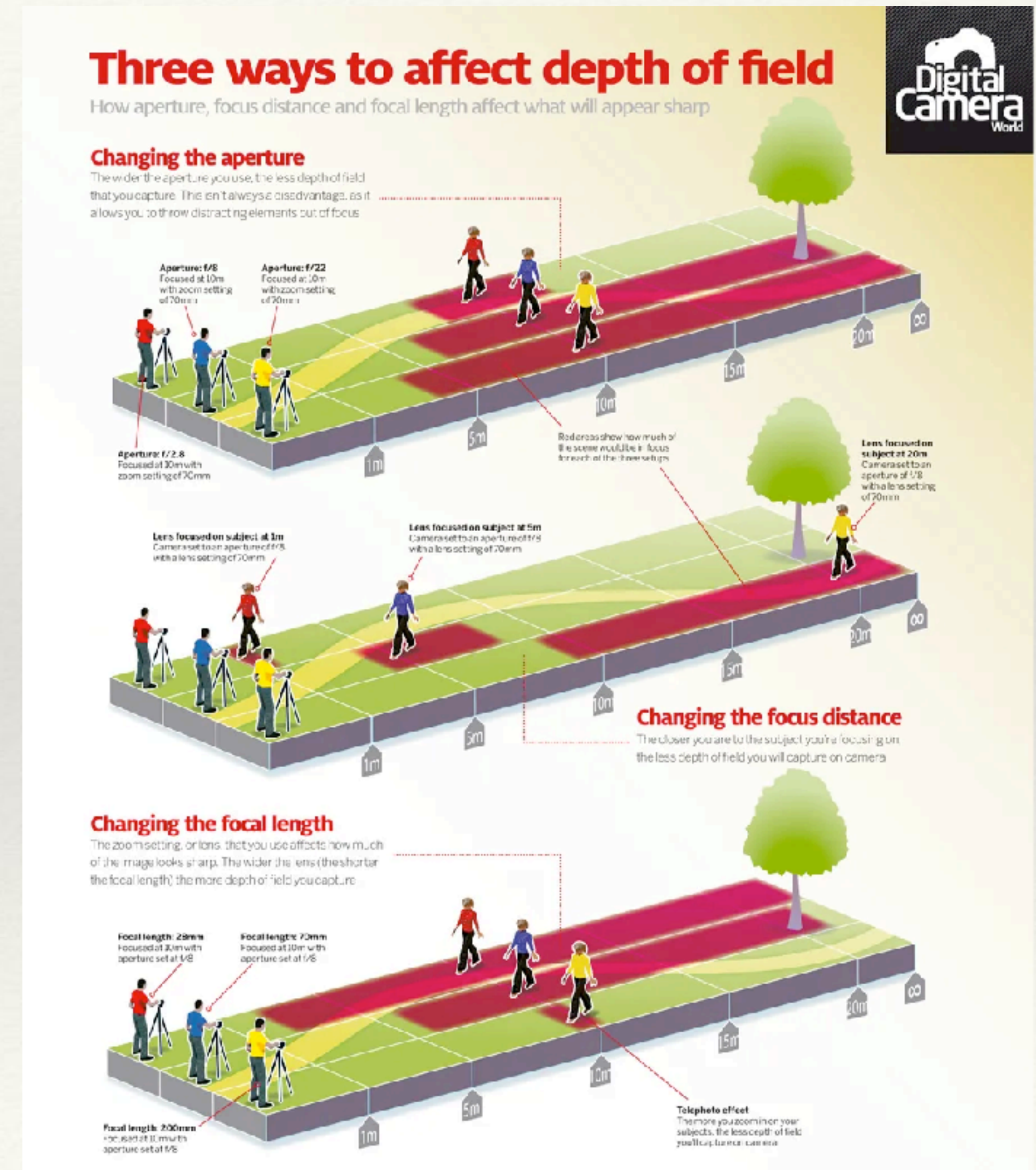


Factors affecting DOF

- ❖ There are 5 factors that affect DOF:
 - ❖ Aperture
 - ❖ Focal length
 - ❖ Focus distance
 - ❖ Sensor size
 - ❖ Image viewing size

Factors affecting DOF

- ❖ Aperture:
 - ❖ Larger aperture = Smaller DOF
 - ❖ Smaller aperture = Larger DOF
- ❖ Focus Distance:
 - ❖ The closer the camera is to the subject = Smaller DOF
 - ❖ The further the camera is from the subject = Larger DOF
- ❖ Focal Length:
 - ❖ Longer focal length = Smaller DOF
 - ❖ Shorter focal length = Larger DOF



Three ways to affect depth of field
How aperture, focus distance and focal length affect what will appear sharp

Changing the aperture
The wider the aperture you use, the less depth of field that you capture. This isn't always a disadvantage, as it allows you to throw distracting elements out of focus.

Changing the focus distance
The closer you are to the subject you're focusing on, the less depth of field you will capture on camera.

Changing the focal length
The zoom setting, or lens that you use affects how much of the image looks sharp. The wider the lens (the shorter the focal length) the more depth of field you capture.

Telephoto effect
The more you zoom in your subjects, the less depth of field you'll capture on camera.

Other callouts in the infographic:
 - Aperture: f/8 Focused at 10m with zoom setting of 70mm
 - Aperture: f/22 Focused at 10m with zoom setting of 70mm
 - Aperture: f/2.8 Focused at 10m with zoom setting of 70mm
 - Rods show how much of the scene is in focus & focus through at the three subjects
 - Lens focused on subject at 20m Camera set to an aperture of f/8 with a lens setting of 70mm
 - Lens focused on subject at 1m Camera set to an aperture of f/8 with a lens setting of 70mm
 - Lens focused on subject at 5m Camera set to an aperture of f/8 with a lens setting of 70mm
 - Focal length: 28mm Focused at 10m with aperture set at f/8
 - Focal length: 70mm Focused at 10m with aperture set at f/8
 - Focal length: 200mm Focused at 10m with aperture set at f/8

Factors affecting DOF

- ❖ So, changing any one of these will change the apparent DOF.
- ❖ If you change two or more of the factors, it gets complicated!

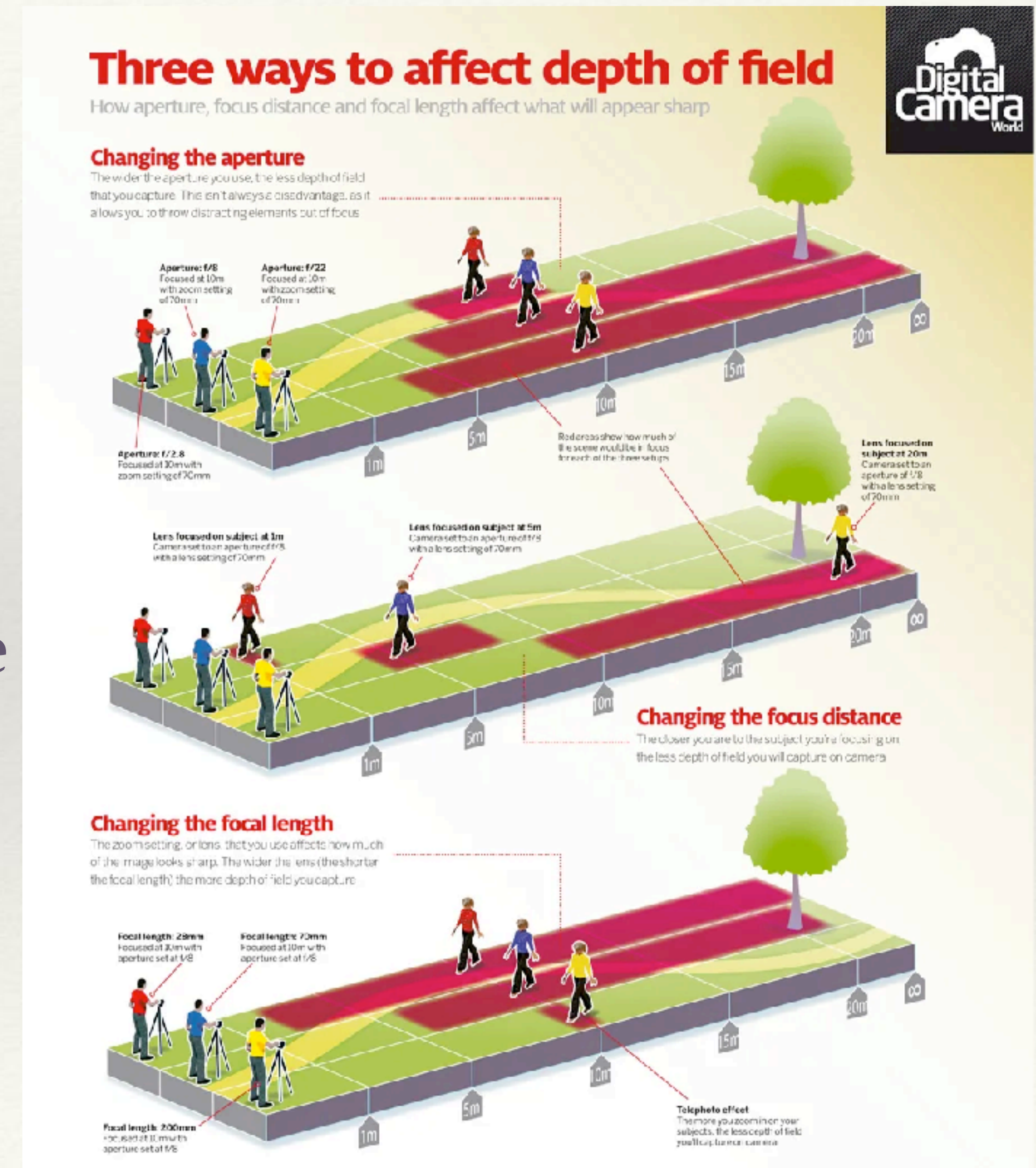
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The infographic consists of three 3D perspective diagrams of a field with a tree and people. Each diagram shows a different depth of field (DOF) indicated by a colored area (red for sharp, yellow for soft, green for out of focus).
 - **Top diagram (Changing aperture):** Shows three camera setups. The left setup is labeled 'Aperture: f/8 Focused at 10m with zoom setting of 70mm'. The middle setup is 'Aperture: f/22 Focused at 10m with zoom setting of 70mm'. The right setup is 'Aperture: f/2.8 Focused at 10m with zoom setting of 70mm'. A note says 'Red areas show how much of the scene is in focus & focus throughout the frame is sharp'.
 - **Middle diagram (Changing focus distance):** Shows three camera setups. The left setup is 'Lens focused on subject at 1m Camera set to an aperture of f/8 with a lens setting of 70mm'. The middle setup is 'Lens focused on subject at 5m Camera set to an aperture of f/8 with a lens setting of 70mm'. The right setup is 'Lens focused on subject at 20m Camera set to an aperture of f/8 with a lens setting of 70mm'. A note says 'Red areas show how much of the scene is in focus & focus throughout the frame is sharp'.
 - **Bottom diagram (Changing focal length):** Shows three camera setups. The left setup is 'Focal length: 28mm Focused at 10m with aperture set at f/8'. The middle setup is 'Focal length: 70mm Focused at 10m with aperture set at f/8'. The right setup is 'Focal length: 200mm Focused at 10m with aperture set at f/8'. A note says 'Red areas show how much of the scene is in focus & focus throughout the frame is sharp'.
 A 'Digital Camera World' logo is in the top right corner of the infographic.



Using Depth of Field

- ❖ The areas of the picture that are clearly not in focus and those that are can be used to creative effect.
- ❖ Think in terms of 'Not much' and 'Lots' of DOF, rather than a specific amount.

Using Depth of Field

- ❖ Where the focus distance is high, the choice of aperture is irrelevant.
- ❖ For limited DOF effects you need to be close to your subject.
- ❖ In macro photography DOF is extremely shallow.
- ❖ DOF decreases when an image is enlarged - Size matters!
- ❖ DOF increases when an image is viewed on a mobile phone.

Using Depth of Field

Shallow depth of field is best applied to photos that need to:

- ❖ Create intimacy between the subject and the audience.
- ❖ Focus on a subject's facial expression or an object's texture.
- ❖ Separate the foreground from the background by blurring distractions.



Using Depth of Field

Medium depth of field is best applied to photos that need to:

- ❖ Tell a story between the subjects and their environment while keeping a respectable distance.
- ❖ Focus on 1-5 subjects or objects.
- ❖ Keep the subjects in the foreground while slightly blurring the background.



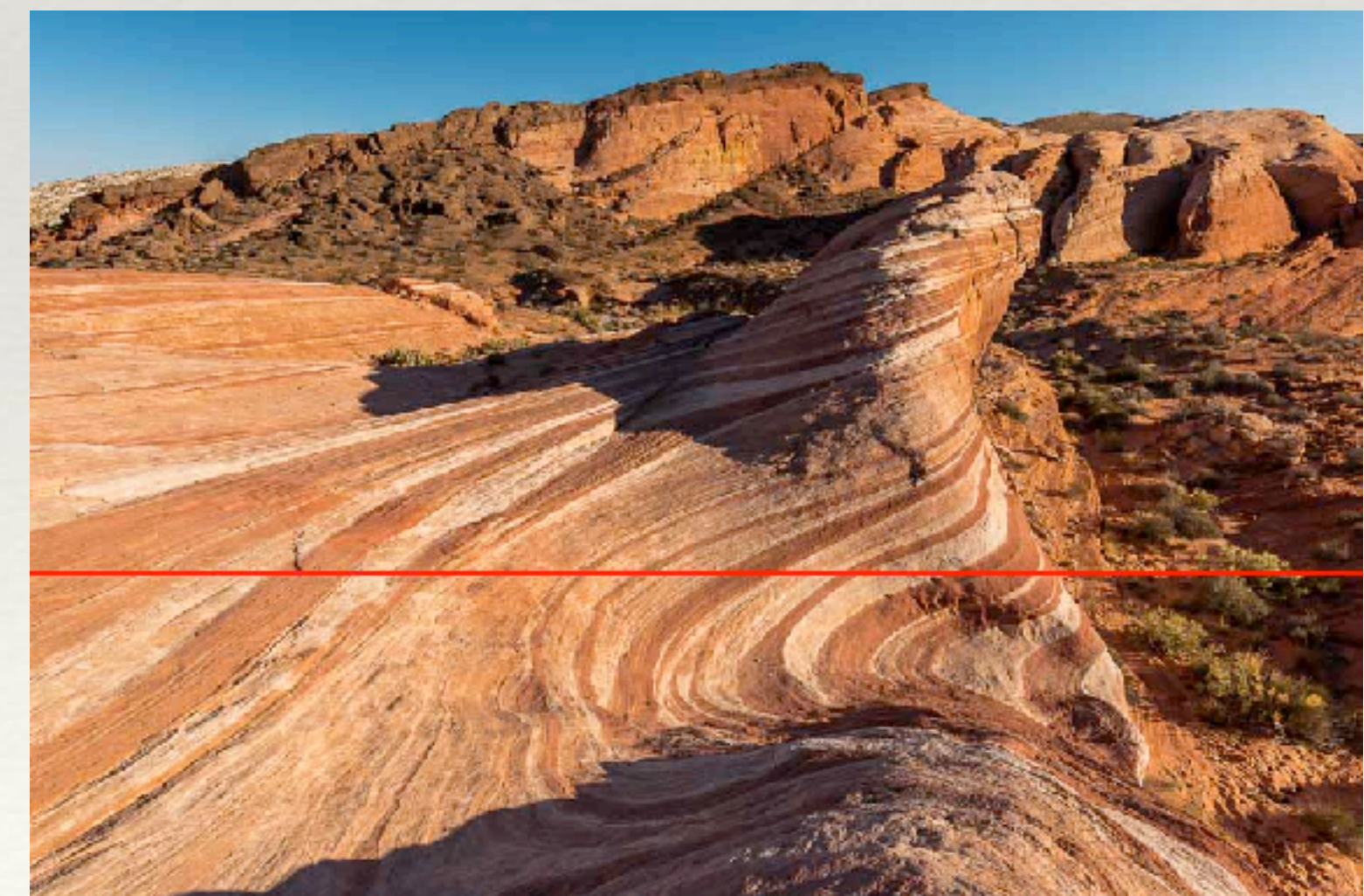
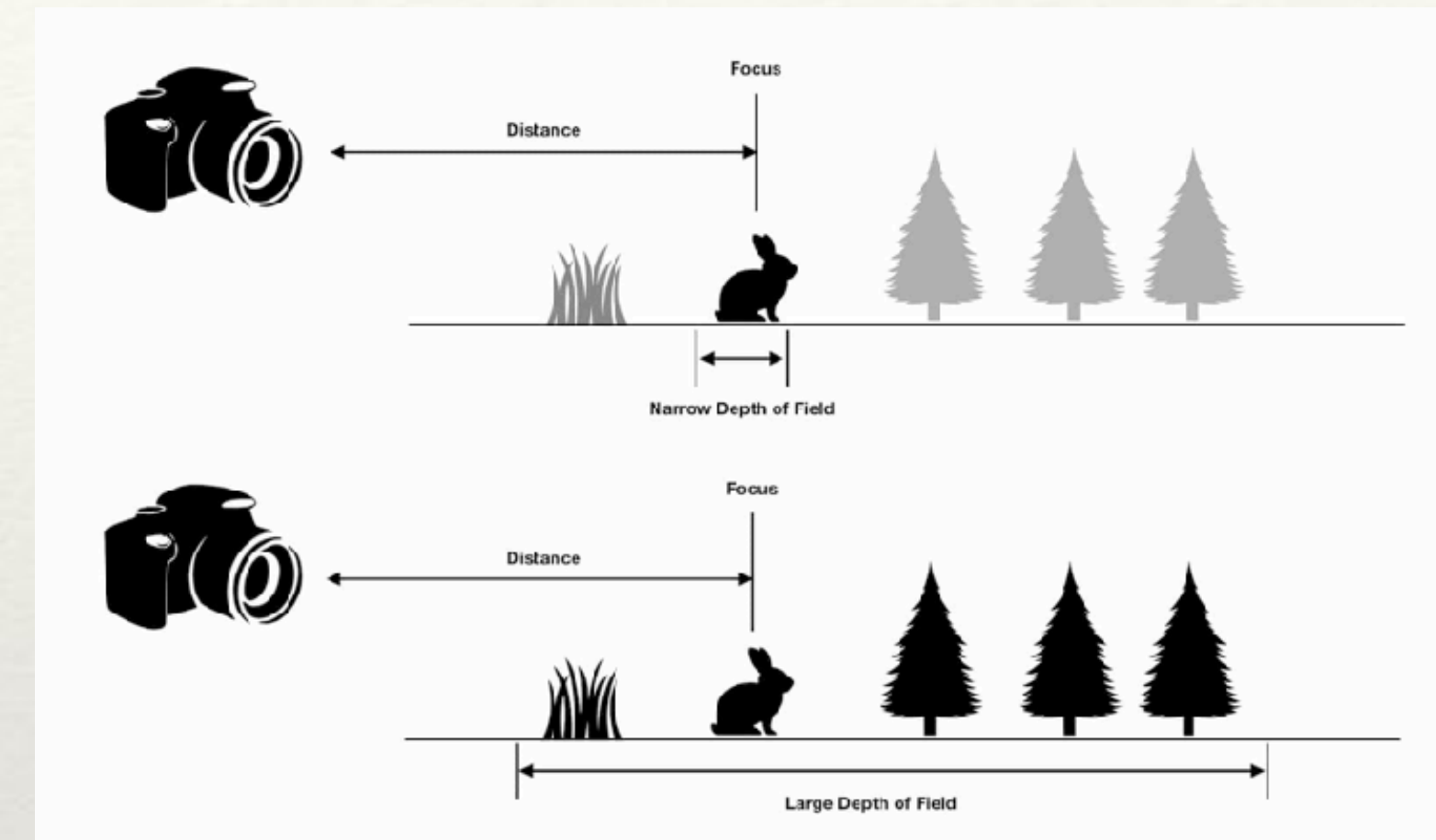
Using Depth of Field

Large depth of field is best applied to photos that need to:

- ❖ Convey a sense of grandeur such as a large crowd or group of objects.
- ❖ Immerse the audience in the environment.
- ❖ Focus on both subjects in the foreground and background.

Hyperfocal Distance

- ❖ Roughly speaking, DOF is split **one third in front of your subject** and **two thirds behind**.
- ❖ This is why you may have heard the advice that you should focus one third of the way into your scene to get everything in focus.
- ❖ As we have seen, DOF depends on where you focus - Focus Distance.

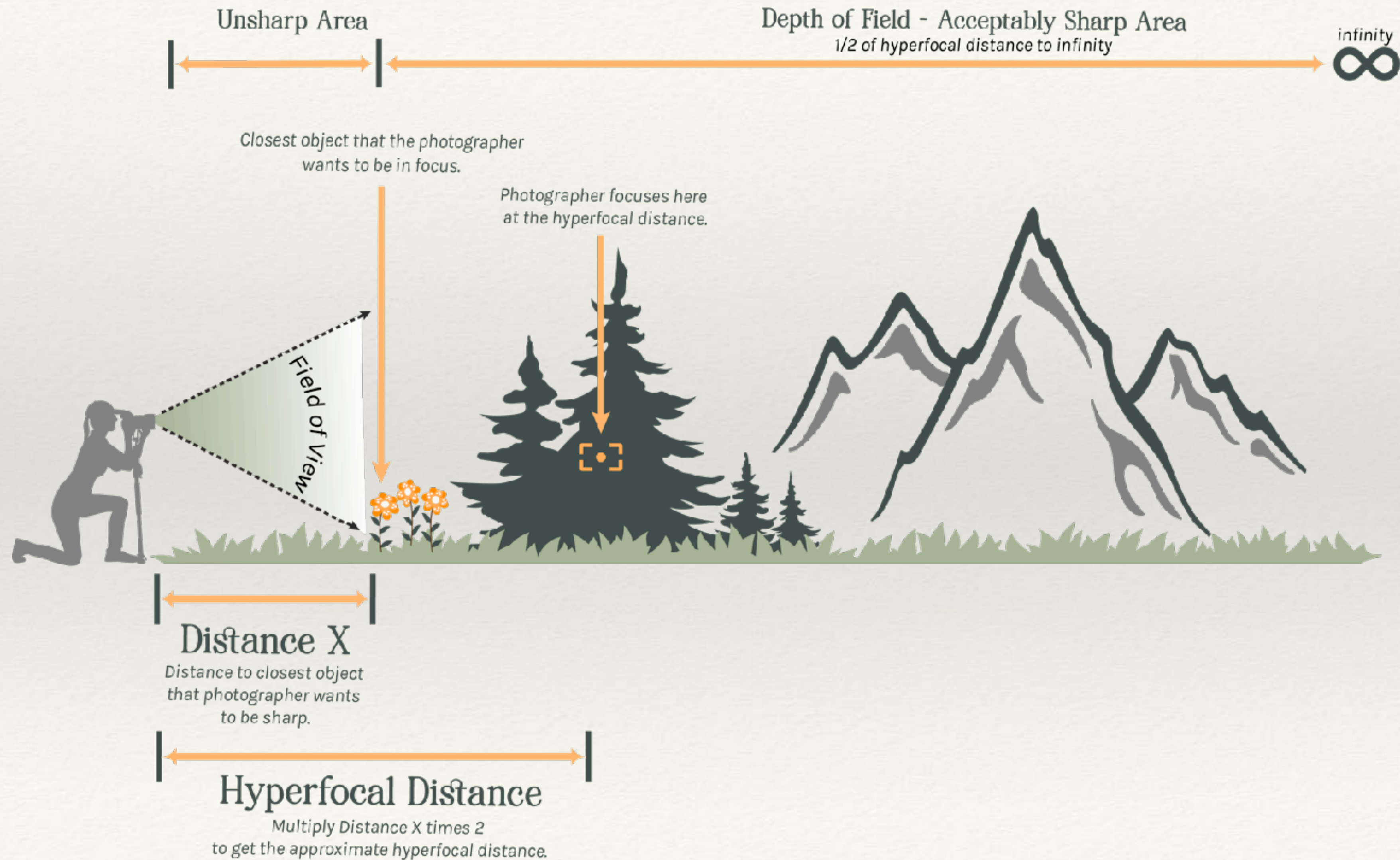




Hyperfocal Distance

The hyperfocal distance is the distance between the camera and a point in your scene at which everything from half the distance to that point and beyond to infinity will be acceptably sharp.

Hyperfocal Distance



Hyperfocal Distance

- ❖ A hyperfocal distance chart is the fastest way to calculate the hyperfocal distance for the settings you need.
- ❖ Enter your camera, focal length and aperture and read the values on the chart.
 - ❖ Notice that hyperfocal distance increases when increasing focal length or aperture (smaller f-numbers: $f/2.8$, $f/4$), reducing depth of field.
 - ❖ On the contrary, hyperfocal distance decreases by decreasing focal length or aperture (larger f-numbers: $f/8$, $f/11$), increasing depth of field.
- ❖ Finally, all you need to do is to assess where the hyperfocal distance is.





Depth of Field - Summary

- ❖ Depth of field is a key compositional element.
- ❖ DOF is a complete illusion, only your focus point is in focus.
- ❖ DOF is the region between the nearest and farthest point that is acceptably sharp.
- ❖ Roughly speaking, DOF is split **one third in front of your subject** and **two thirds behind**.
- ❖ There are 5 factors that affect DOF: Aperture, Focal length, Focus distance, Sensor size and Image viewing size.
- ❖ Think in terms of 'Not much' and 'Lots' of DOF, rather than a specific amount.



Shutter Speed

❖ Q&A

