

A guide to

Camera Exposure

for beginners

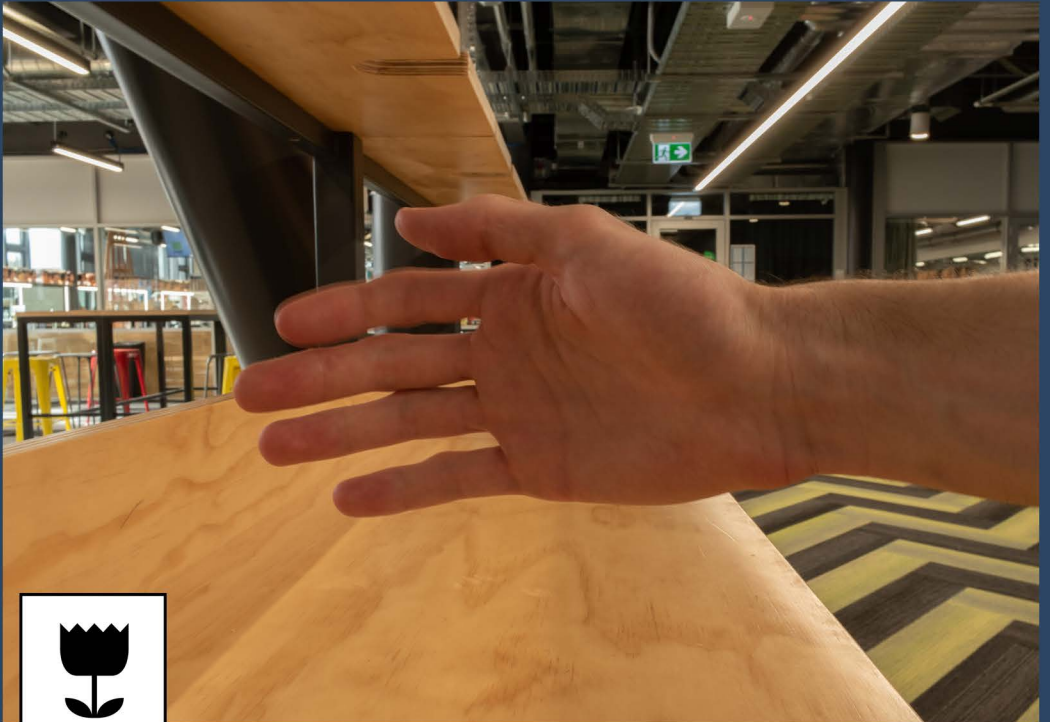
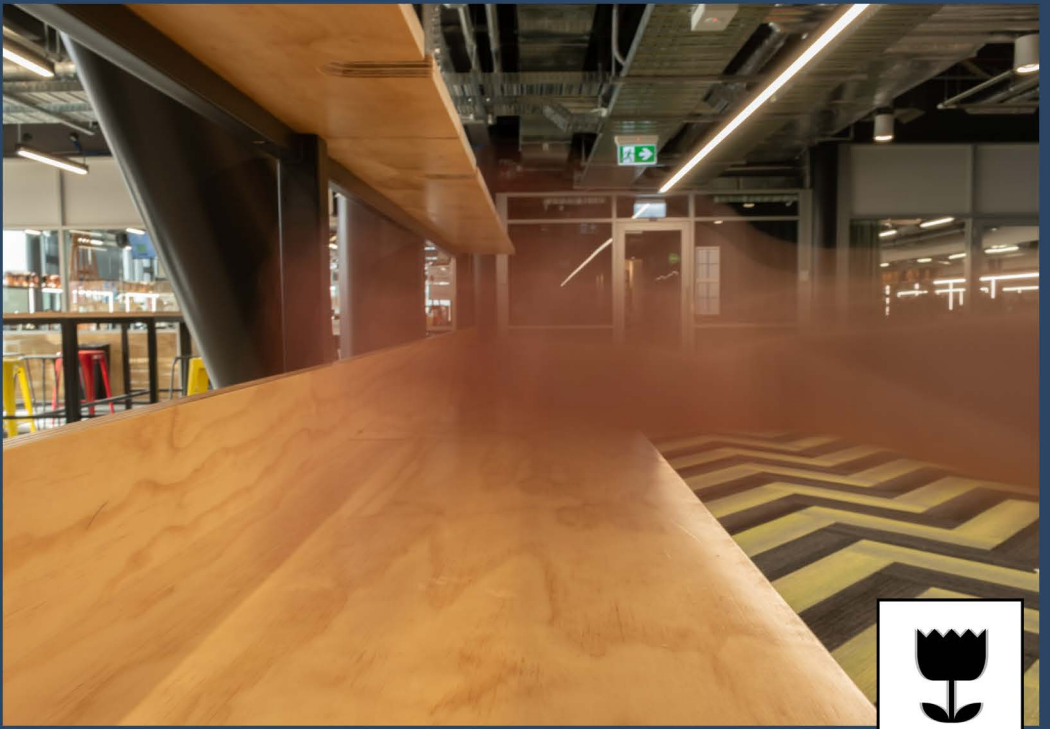


SHUTTER SPEED

The shutter speed is determined by how long the camera's shutter is left open when taking a photo. The longer the shutter is left open, the longer the sensor is exposed to light.

A longer shutter speed also means the camera records more time. This can result in camera shake if the camera isn't being held steady, and motion blur if there is movement in the scene.

While motion blur may be desired for creative reason, for example, to show the movement of certain objects, camera shake is generally undesirable and results in an overall blurry image.

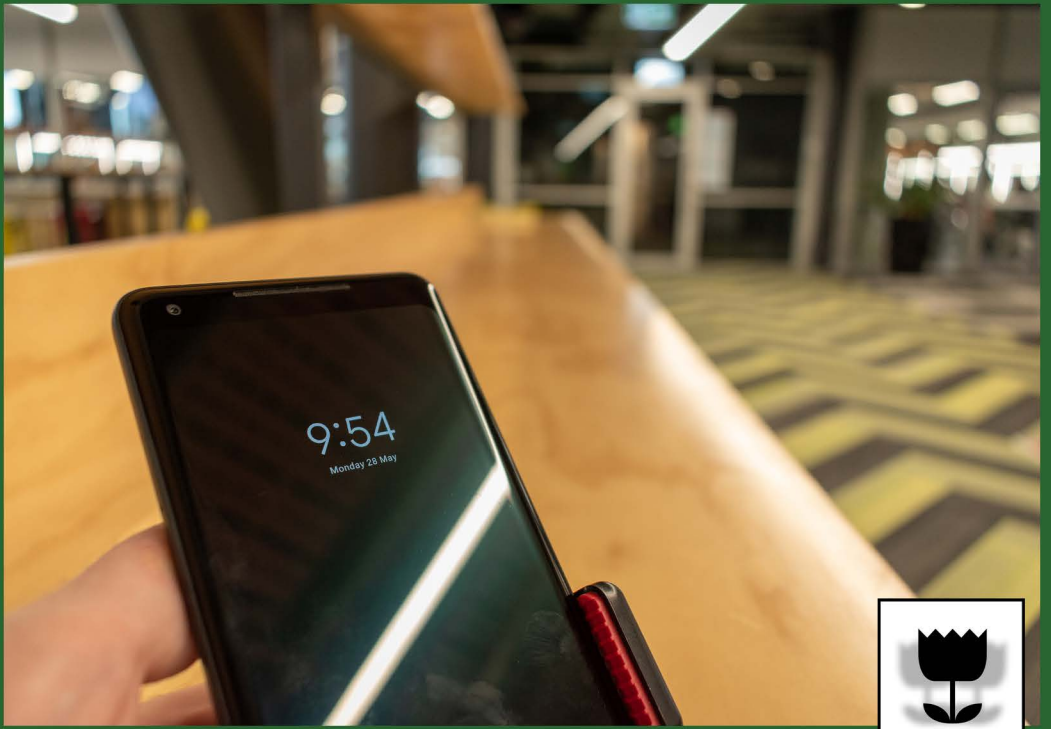


APERTURE

The camera's lens contains multiple blades that form a circle-shaped opening which lets light through to the sensor. This size of this opening is measured in f-stops, and this decides the aperture of an image.

The opening size and the aperture are inversely related, so the higher/smaller the aperture, the less light reaches the sensor. Likewise, the lower/wider the aperture, the more light reaches the sensor.

A small aperture means significantly less light rays reach the sensor, specifically those that aren't passing directly through the center of the lens. As a result, these light rays meet on the sensor, rather than in front of or behind it.



ISO

If the shutter speed and aperture are set to one's desires, but the exposure is too dark, the sensitivity of the camera's sensor can be altered by adjusting the ISO. This means the pixels on the sensor absorb light faster when using a higher ISO.

This can be a useful way of digitally 'increasing' the amount of available light, without having to increase the depth of field or the amount of camera shake and motion blur, which result from using a wider aperture and a slower shutter speed.

There are some disadvantages to this however. Increasing the ISO can result in noise, especially in dark areas of an image, as well as reduced colour accuracy.

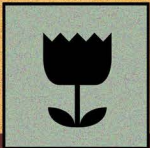
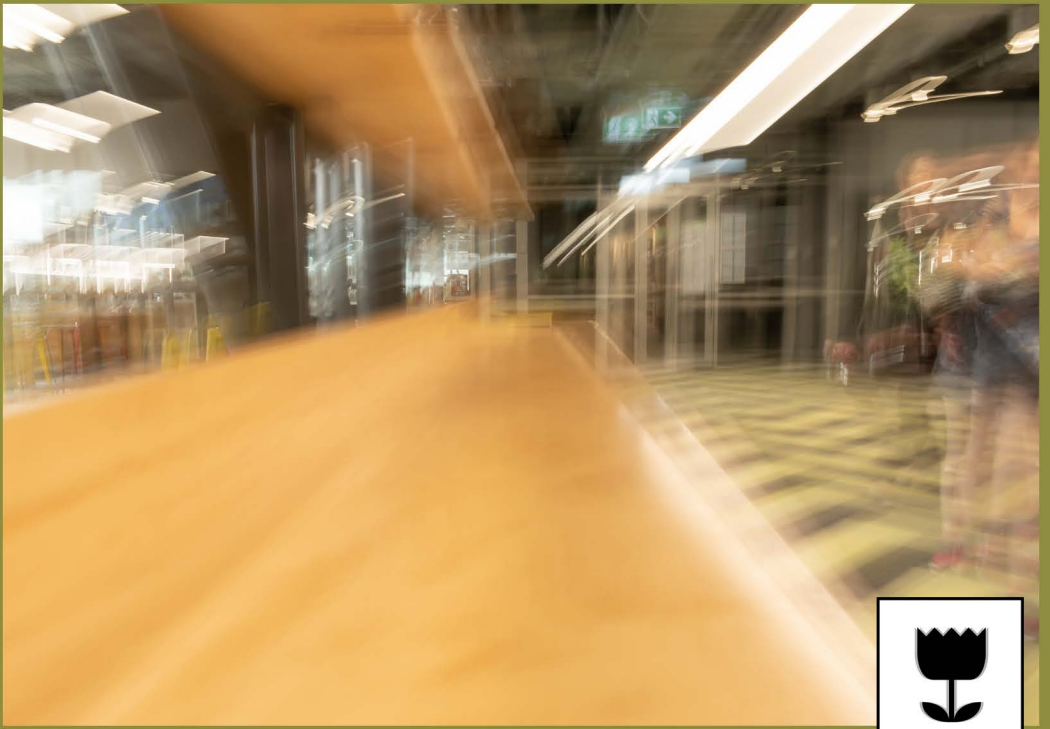


IMAGE STABILISATION

Some lenses include a stabilisation system that allows photographers to capture a sharp image without using a longer shutter speed. Canon calls this Image Stabilisation, while Nikon calls it Vibration Reduction.

The amount of stabilisation they provide is measured in stops. For example, when using a lens with 3 stops of VR, an image captured at 1/400th of a second would be as sharp as an image captured at 1/50th of a second, when the latter is taken with VR disabled.

VR lenses usually include a switch to toggle the VR, but for those that don't, VR can be turned off in the camera's settings menu.



WHITE BALANCE

The white balance relates to how blue or orange an image is, as well as how green or red it is. Usually the white balance should be adjusted so that the white parts of an image are white, and the skin tones look normal.

The balance between blue and orange is called the colour temperature, while the balance between green and red is referred to as the colour tint.

The photographer may wish to stray from the correct white balance for aesthetic reasons, often to make the image look cooler or warmer.

