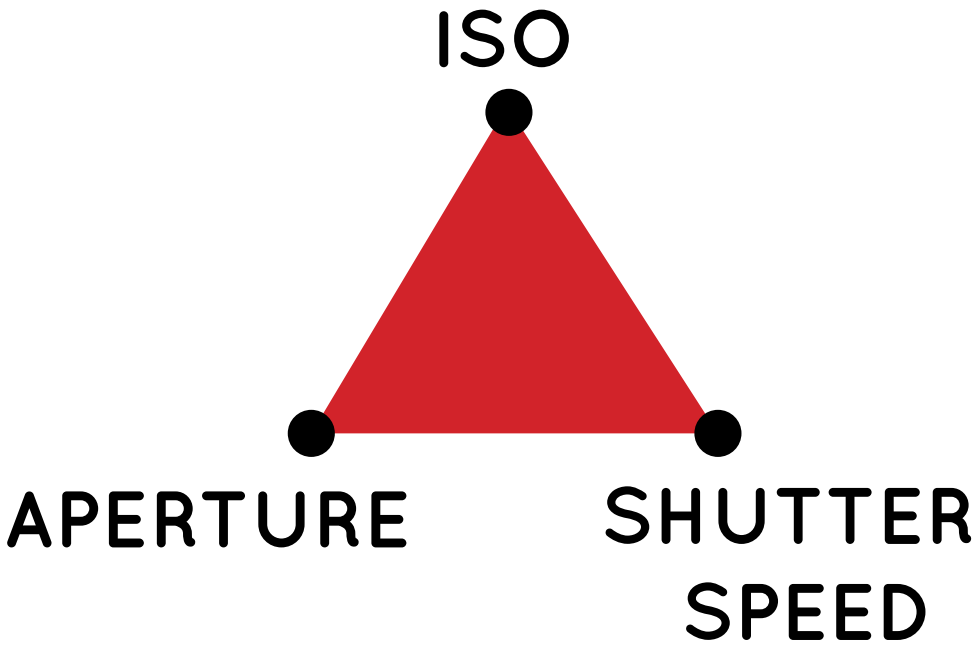
CUDGEGONG CAMERA CLUB

APERTURE, SHUTTER SPEED AND ISO


EXPOSURE

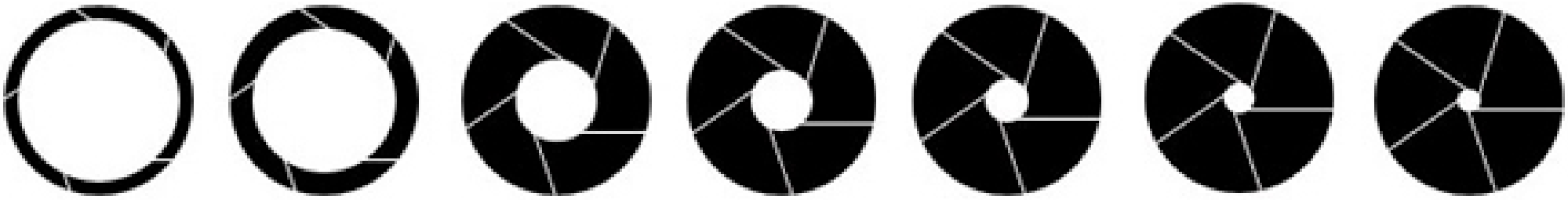
- When you think of the craft or art of photography, you must immediately think of exposure.
- Exposure is a critical element that determines what is actually recorded on the image sensor.

There are three adjustable elements that control the exposure



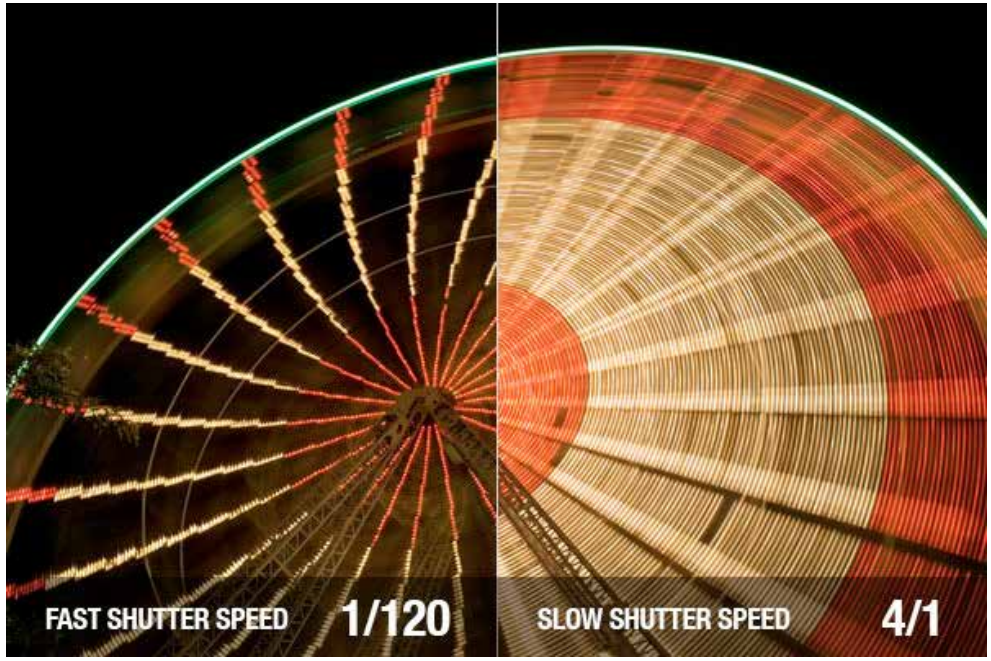
APERTURE

- A lens's aperture is the opening in the diaphragm that determines the amount of light passing through the lens.
- A small f-stop lets a tremendous amount of light pass through, but when the diaphragm is at its smallest, only a tiny amount of light is let in.



SHUTTER SPEED

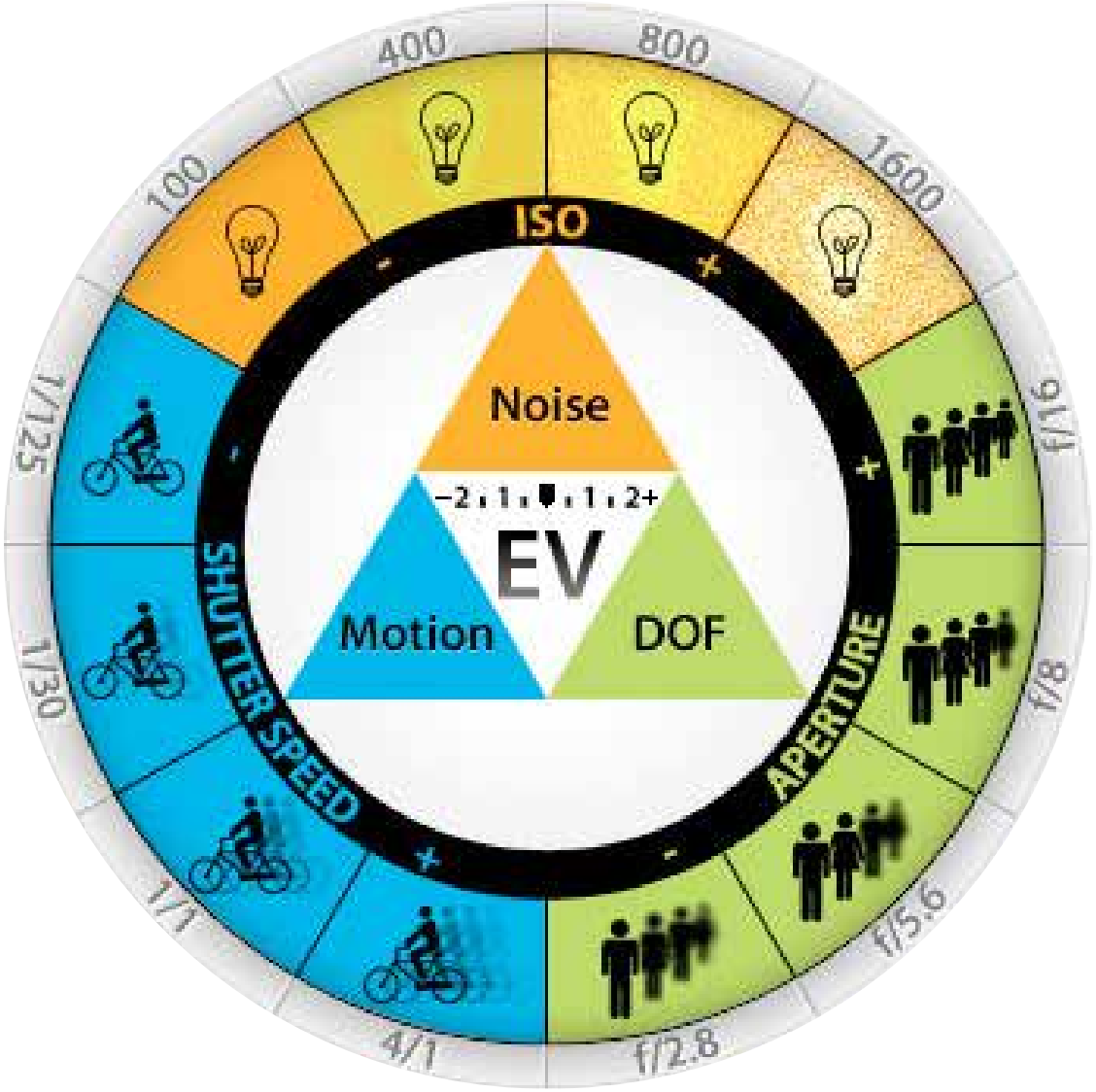
- Shutter speed is measured in fractions of a second, and indicates how fast the curtains at the film plane open and close. The shutter speed controls how long light enters the lens and hits the image sensor.
- The shutter gives you control on how motion is recorded. If the shutter speed is faster than the object then the image will be tack sharp. If the shutter speed is slower, then you'll get blurred objects.



ISO

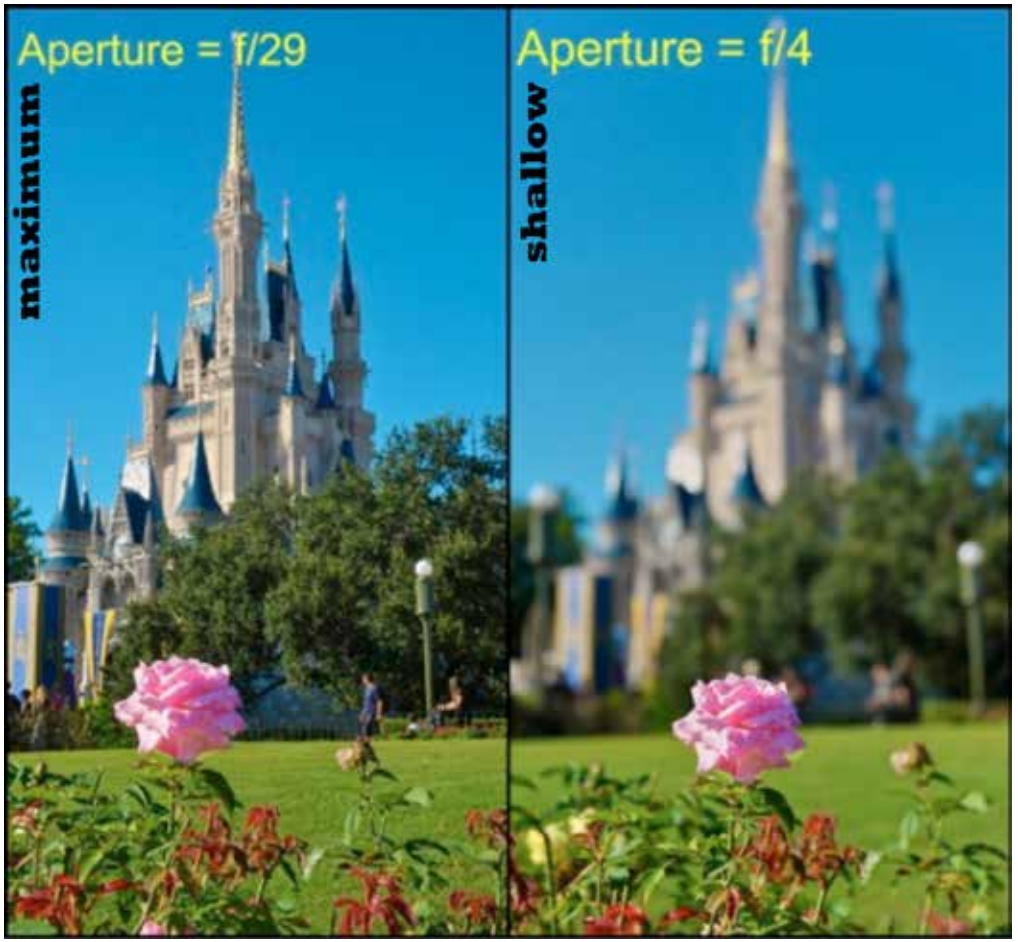
- ISO is the light sensitivity of your camera's sensor.
- The higher the ISO, the more sensitive your camera will be to light and the grainier your images will be.
- The lower the ISO, the less sensitive the camera will be to light and the less grainier your images.
- Higher ISOs allow for faster shutter speeds. (Good for low light situations)

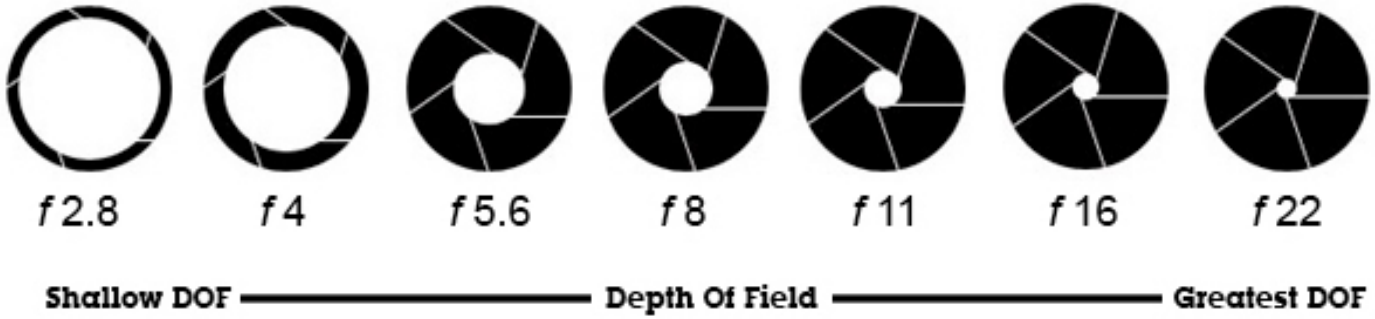
THE EXPOSURE TRIANGLE



WHAT IS DEPTH OF FIELD?

- Depth of field refers to the range of distance that appears acceptably sharp in your photo.
- Large aperture = Small f-number = Shallow (small) depth of field
- Small aperture = Larger f-number = Deeper (larger) depth of field





WHEN SHOULD I USE A SHALLOW DEPTH OF FIELD?

- Using a shallow depth of field is a good way to make your subject stand out from its background and is great for portrait photography.

WHEN SHOULD I USE DEEPER DEPTH OF FIELD?

- In landscape photography it is important to get as much of your scene in focus as possible. By using a small aperture you will be able maximize your depth of field to get your scene in focus.

CAMERA MODES

PORTRAIT MODE

Your camera will automatically select a large aperture which helps to keep your background out of focus.

LANDSCAPE MODE

Sets the camera up with a small aperture to make sure as much of the scene you're photographing will be in focus as possible.

MACRO MODE

Macro mode lets you move your closer into your subject to take a close up picture. It's great for shooting flowers, insects or other small objects.

SPORT/ACTION MODE

Photographing moving objects is what sports mode is designed for. It is ideal for photographing any moving objects including people playing sports, pets, cars, wildlife etc. Sports mode attempts to freeze the action by increasing the shutter speed.

NIGHT MODE

Night mode is for shooting in low light situations and sets your camera to use a longer shutter speed to help capture details of the background but it also fires off a flash to illuminate the foreground (and subject).

CAMERA MODES - DSL

AUTO

Your camera will automatically set all controls to give you the best exposure.

PROGRAM (P)

Program mode is similar to Auto but gives you a little more control over some other features including flash, ISO etc.

SHUTTER PRIORITY (S)

In Shutter Priority mode you choose the shutter speed and your camera chooses the other settings for the best exposure.

APERTURE PRIORITY (A)

In Aperture Priority mode you choose the aperture and your camera chooses the other settings for the best exposure. This mode is best to control Depth of Field.

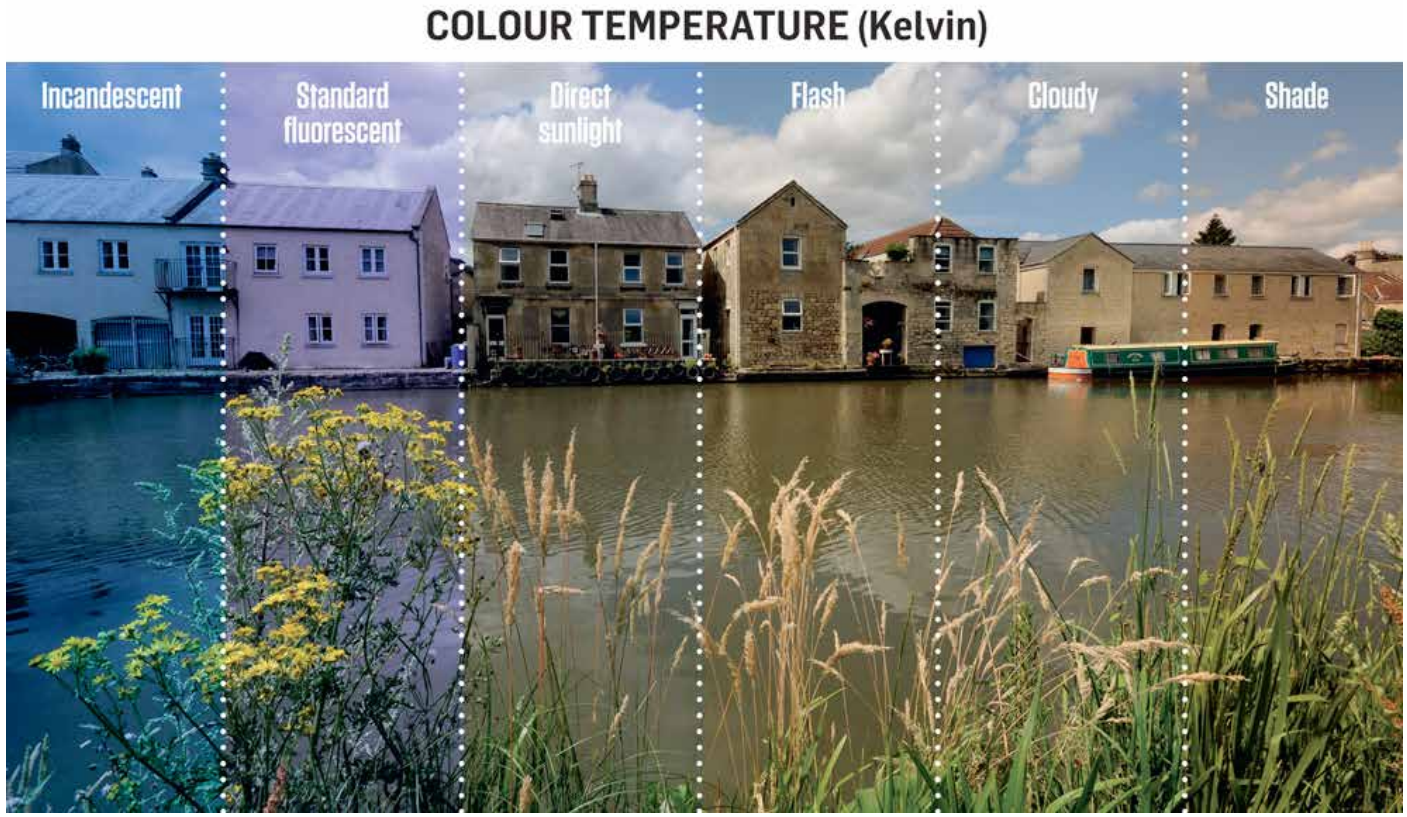
MANUAL

In this mode you have full control over your camera and need to think about all settings including shutter speed, aperture, ISO, flash etc. It gives you the flexibility to set your shots up as you wish.

WHITE BALANCE

The White Balance setting you choose will change the colour balance in your pictures, making them warmer or cooler depending on how the light you're shooting in affects objects and surroundings.

Using Auto White Balance is the simple option, but your camera's White Balance presets give you more control over colour.



WHITE BALANCE

Auto – this is where the camera makes a best guess on a shot by shot basis. You'll find it works in many situations but it's worth venturing out of it for trickier lighting.

Tungsten – this mode is usually symbolized with a little bulb and is for shooting indoors, especially under tungsten (incandescent) lighting (such as bulb lighting). It generally cools down the colors in photos.

Fluorescent – this compensates for the 'cool' light of fluorescent light and will warm up your shots.

Daylight/Sunny – not all cameras have this setting because it sets things as fairly 'normal' white balance settings.

Cloudy – this setting generally warms things up a touch more than 'daylight' mode.

Flash – the flash of a camera can be quite a cool light so in Flash WB mode you'll find it warms up your shots a touch.

Shade – the light in shade is generally cooler (bluer) than shooting in direct sunlight so this mode will warm things up a little.

ACTIVITY

POINT AND SHOOT CAMERA

1. Photograph a person using the Portrait setting mode setting

2. Photograph a moving car using the Sport mode setting

3. Take a close up photo of a flower using the Macro mode setting

4. Take a landscape photo using the Landscape mode setting

DSLR CAMERA

1. Photograph a person using a low aperture Eg. f2.8/f4/f5.6

2. Photograph a person using a high aperture Eg. f16/f22

Hint: Use the Aperture priority setting to do this.

Compare the results

3. Photograph an object using a low ISO Eg. 100

4. Photograph an object using a high ISO Eg. 1600/3200

Hint: Use the Shutter priority setting to do this.

Compare the results