

## Lighting and Photographing your Work

Controlling exposure: working  
with flash and constant light

# The Studios

Small Studio Room 241



Large Studio Room 203

## Main Studio Room 203

The main studio in Room 203 is ideal for creating work and photographing and filming large set ups with people or furniture. It can also be used to photograph large paintings over two or three feet in diameter.

An additional induction on site will be necessary should anyone wish to use this area



# Small Studio/Copy Room - Room 241

The small studio or copy room which sits in the main Photo unit workshop is ideal for shooting smaller flat works such as illustrations and books.

It contains both a copy bench for shooting directly overhead and a small table top studio set up with two Bowens flash strobes.

This studio will be available for you to book via our SISO system once you have completed this induction,

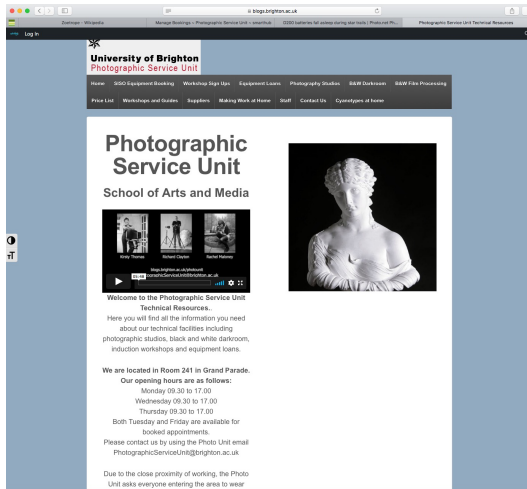


# Benefits Of Lighting In The Studio



In the studio the lighting is fully controllable in its positioning, intensity and quality. Every angle of an object can be lit and fully detailed to show every facet and detail. In our studios one of our team can help you create the lighting effect which best shows off your work.

# Registering for a SISO Account



Go to our webpage

<https://blogs.brighton.ac.uk/photounit/>

In here you will find information about all the services the Photo Unit offers.

If you look at the menu you will see there is a page called SISO Equipment Booking.

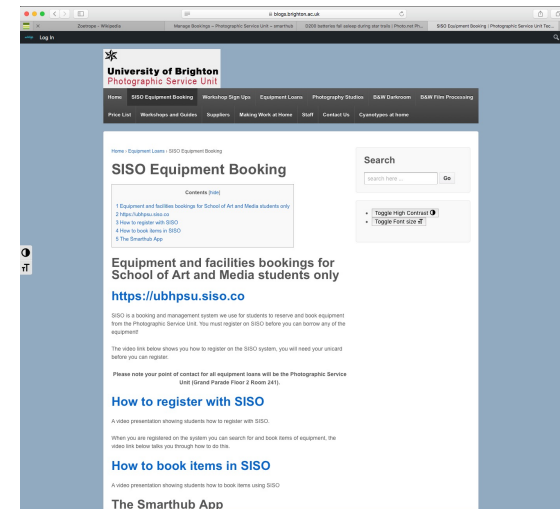
In here: <https://blogs.brighton.ac.uk/photounit/equipmentloans/siso-equipment-booking/> you will find the details of how to use and join our SISO Loans system.

Click on the link:

<https://ubhpsu.siso.co>

and you will be taken to the registration page.

Follow the guide and you will then have access to both equipment and room bookings



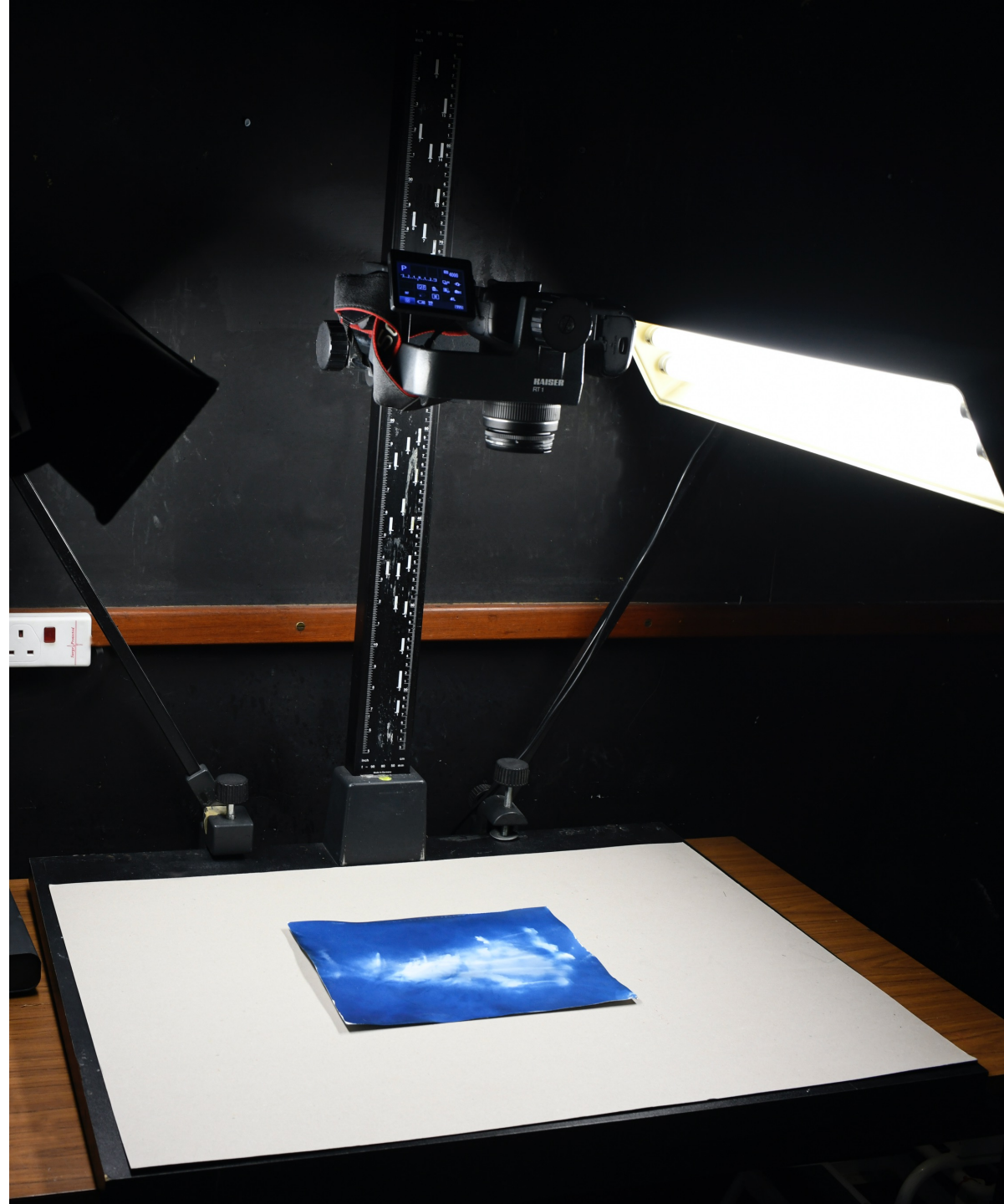
# Safety In The Studio



- If the fire alarm sounds, stop working, leave all your belongings and go to the nearest fire exit.
- No food or drink is to be consumed in the studio.
- Report faulty equipment and breakages to Technical Staff as soon as you notice them.
- Be aware of trailing leads and objects placed around the studio that could be a trip hazard.
- Beware, as the studio strobe lights can become very hot. Be careful not to brush against them or knock them when they are turned on as you may get burnt or the bulbs may blow. Turn them off when not in use and ask one of the Technical Staff if you want them moved or the fittings changed.
- In the Main Studio please take care as the pantographs (which the lights hang from) can retract and trap your fingers.
- Always let Technical Staff know exactly what you are photographing or filming in the studios so that they can firstly set up the area before you start and secondly ensure that all necessary safety provisions have been made (such as Risk Assessments for hazardous work)

# The Copy Stand

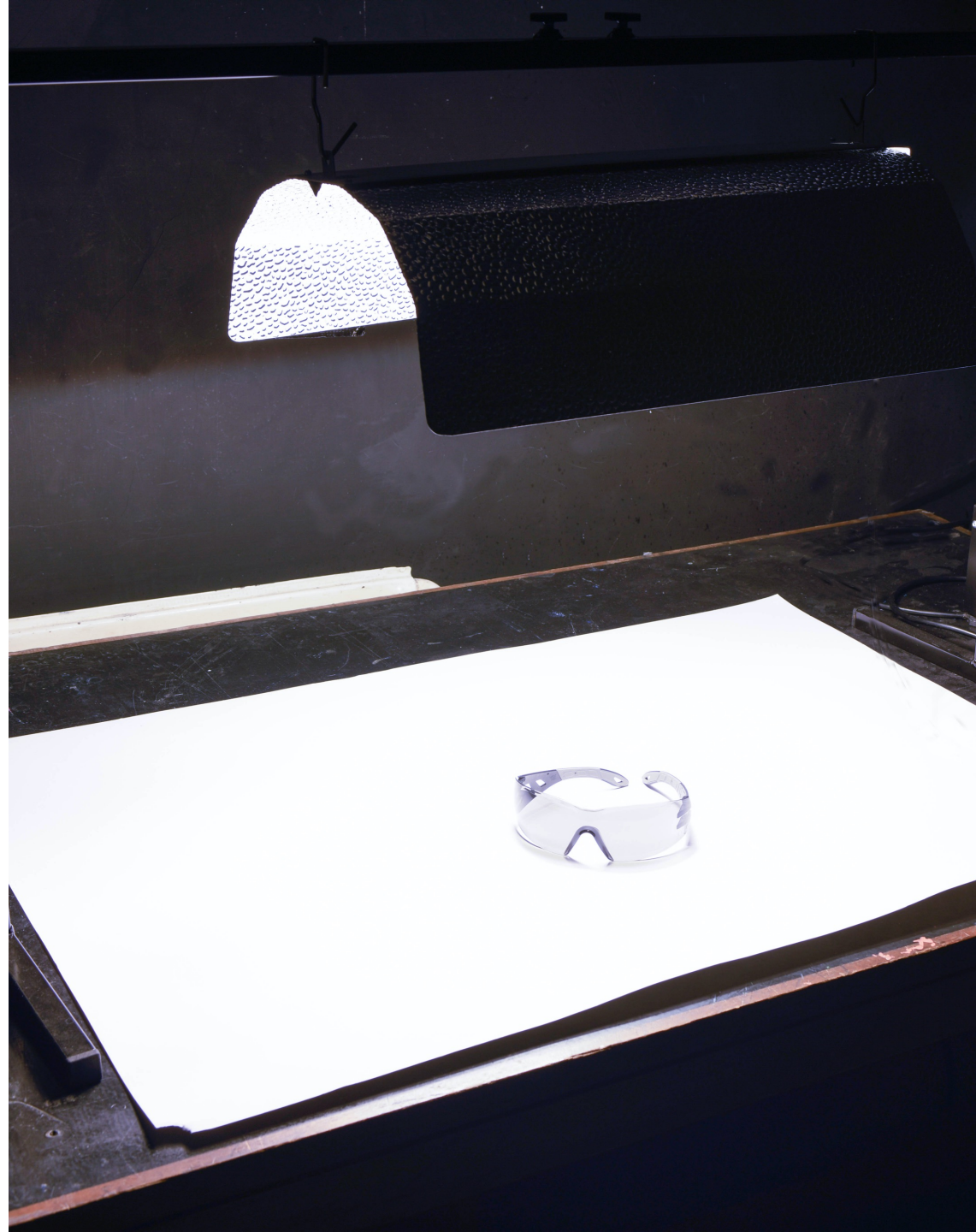
- The small studio includes a copy stand which is ideal for photographing flat work. It consists of two strip lights that can be adjusted to different angles and different heights. It also has a clampy which will hold one of our cameras directly above the work. The clamp allows the camera to be held completely steady allowing slow shutter speeds to be used so that student's work can be fully illuminated to show all fine details.





## UV Light

- The Photo unit also has a UV light which can be loaned out and used in the small studio for exposing Cyanotypes. We run a Cyanotype Induction which has to be done first but the studio and also a room for coating cyanotype onto different materials can then be booked via our SISO loans system.



## Table-top Studio

- For larger items and for objects that are not flat a table-top studio is also available. The studio consists of two fully adjustable strobe lights with a set of light adapters also available for changing the quality of the light. The studio also comes with a tripod and full frame DSLR. A member of staff will be available to help you set up



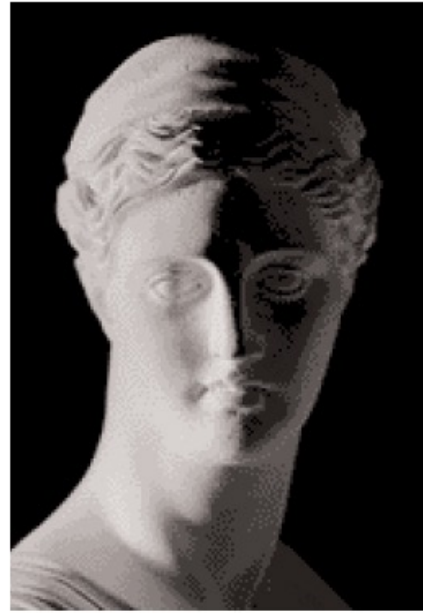
# How Simple Lighting Changes Make Objects Look Different



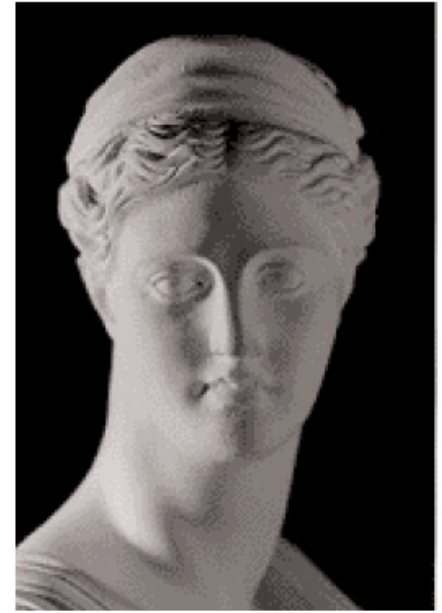
Front, direct



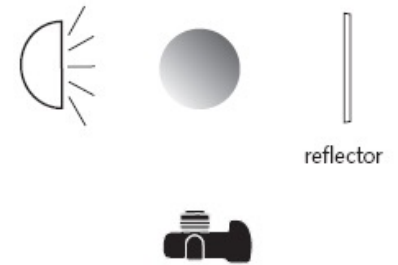
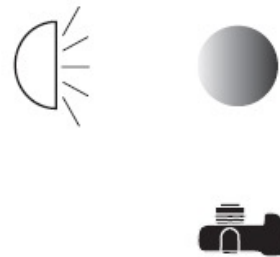
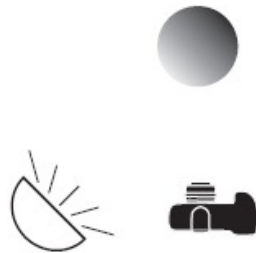
45-degree



Side or 90-degree



Side with reflector fill



# Light Adapters and Accessories



Snoot



Beauty Dish



Umbrella



Softbox

There are various different fittings available in the studio which all change the quality of the light from the flash unit.



Reflector

# Umbrellas



Umbrellas create soft and diffused light and give you a greater span of light by throwing the light out wide. There are two main types:

1 - **Shoot-through Umbrella:** The umbrella is placed between the Light source and your subject. It's known as a shoot-through because light is diffused as it passes through the umbrella's translucent material similarly to the softbox.

2 - **Reflective Umbrella:** The light source is targeted away from your subject and towards the umbrella. The diffusion comes when the light bounces on the umbrella and back towards your subject. For example you would turn the umbrella around so it points away from the subject you want to light- the reflected or bounced back light will be the light that hits the subject

# Snoot



A snoot is a metal tube that is attached to the front of your light. The tube restricts the light down to a narrow beam. This isolates the light and allows you to direct it to a certain area.

Usually used to create strong shadows or a 'spot light' effect. This allows for a more dramatic or theatrical type of lighting.

# Reflectors

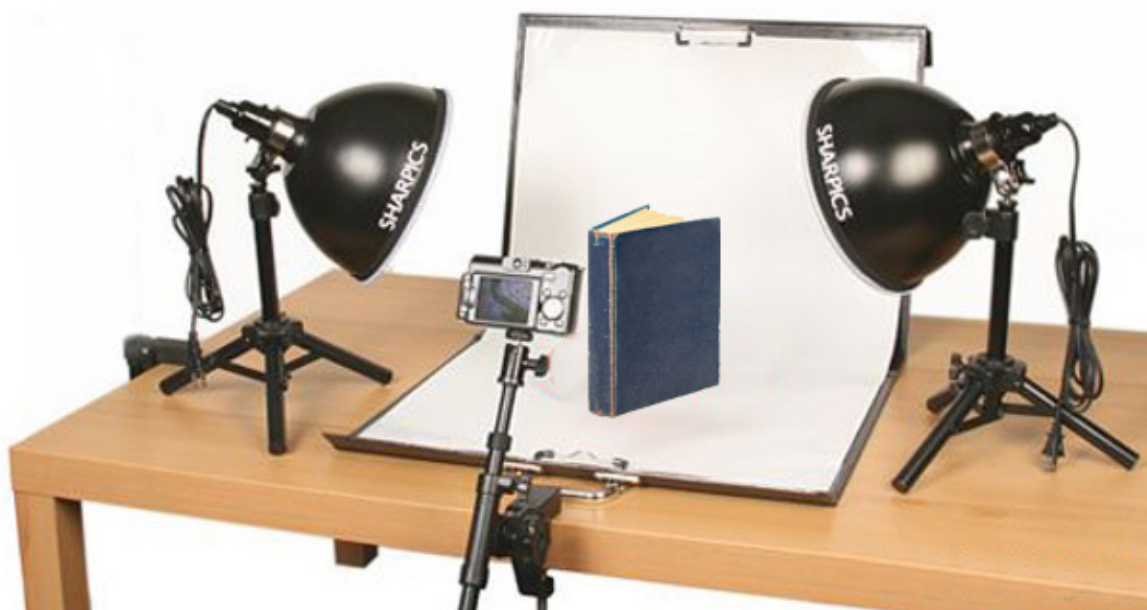


A reflector takes light that would usually spill out to the sides and redirects it back towards the subject. Without the use of a reflector a large quantity of usable light could be wasted. The color of the reflector will show up onto the subject.

- Gold – produce warm tones
- White – creates neutral color effect
- Silver – creates neutral tones but brighter than white

For photographing your work try to ensure that you use a white or silver surface. The reflector can even be a simple piece of card

## Simple Table-Top Studio



A simple table top studio can be built at home to capture images with a neutral background and controllable lighting. To change the intensity of a light on a subject moving the light closer to an object increases the intensity, moving it away decreases it.



# Using a Reflector

- Natural daylight can be controlled by using a reflector. By bouncing light back onto an object shadows can be filled as if you were using a fill light in the studio. The examples on the left show how this can be used, particularly with light coming through a window. You can either use one of the Photo Units reflectors or a simple piece of white or silvered card.



# Using a DSLR Camera



Both of our studios come fully equipped with lighting, cameras and all the things you need to take your images.

If you are working elsewhere and you do not have a camera of your own there are a range of digital cameras and other items including lighting available to loan from the Photo Unit.

Always borrow a tripod as it is important to keep your camera stable (and level) when taking your images.

We suggest you take photographs from as many angles as possible to capture all the details and then edit down to those that show the best aspects.

# Camera Modes

**P:** Program mode has the camera calculate both [shutter](#) speed and [aperture](#) (given a manually or automatically selected ISO). The difference between Program mode and Full Auto mode is that in program mode, only the *exposure* is automatic, while other camera settings (e.g. shooting mode, exposure compensation, flash) can be set manually; in Full Auto mode everything is automatic.

**A or Av:** [Aperture priority](#) or 'Aperture value' enables manual control of the aperture with the shutter speed calculated by the camera for proper exposure (given an ISO sensitivity).

**S or Tv:** [Shutter priority](#) or 'Time value' enables manual control of the shutter speed with the aperture calculated by the camera for proper exposure (given an ISO sensitivity).

**M:** Manual mode both shutter speed and aperture and independently set manually (with ISO sensitivity also set manually), where proper image exposure requires accurate manual adjustment.



# Check Your Exposure



Typical  
Viewfinder  
Info

Shutter Speed

Aperture

Exposure meter

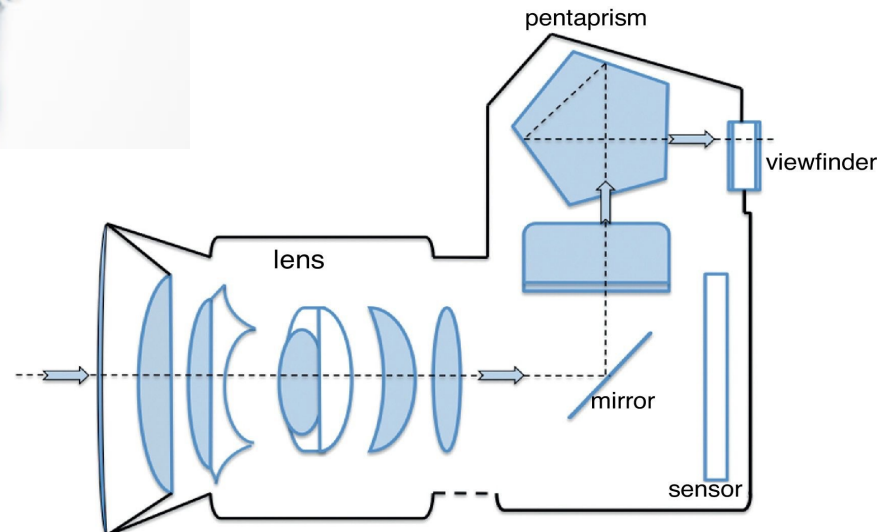
ISO Setting

# Controlling The Light in Your DSLR Camera

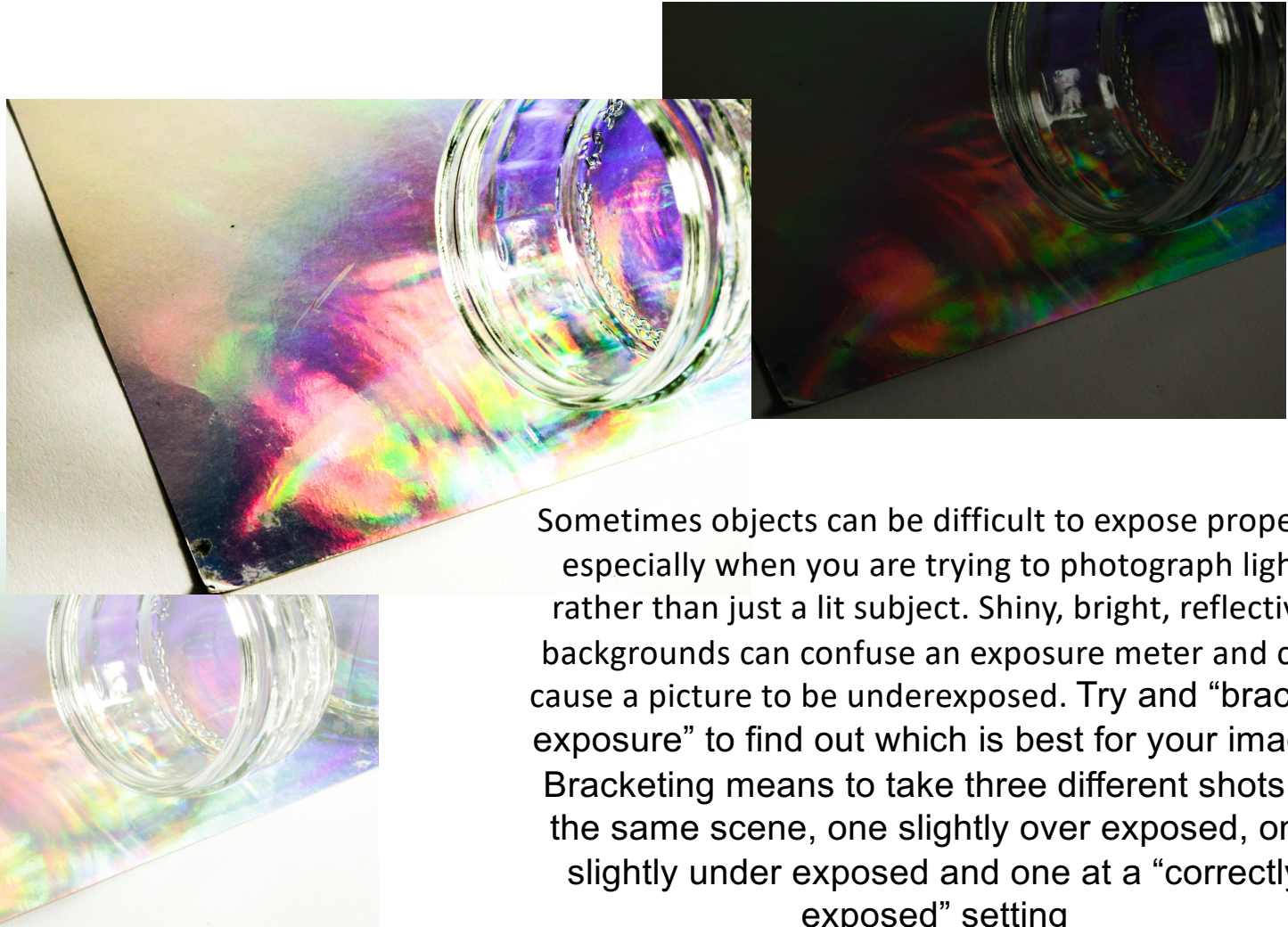


By using your camera controls you are able to change the level of light entering your camera before it hits the camera sensor.

Changing the camera controls effects the light hitting your camera sensor and can affect the exposure of your image. However, the exposure controls will also affect other things as well. These can be used to change how your photos are perceived and understood by the viewer.



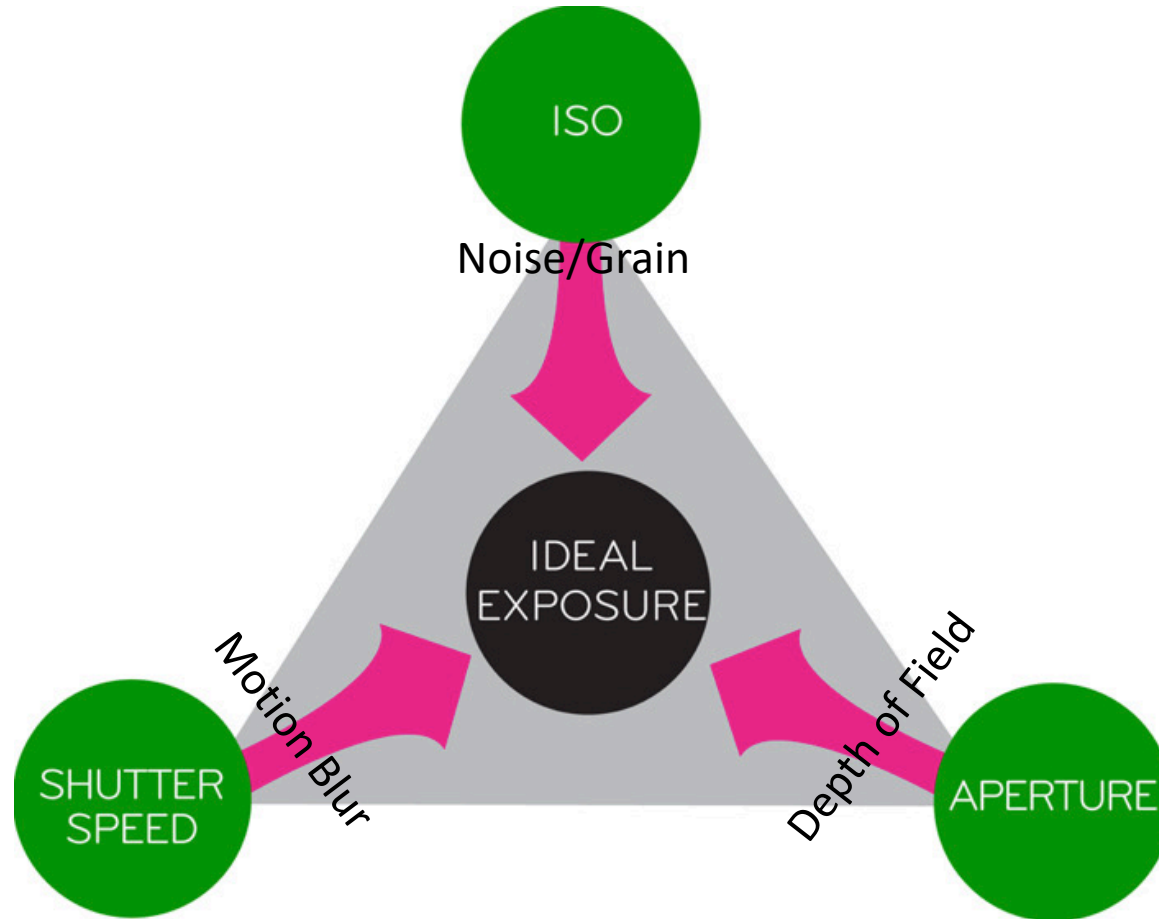
# Getting Your Exposure Right



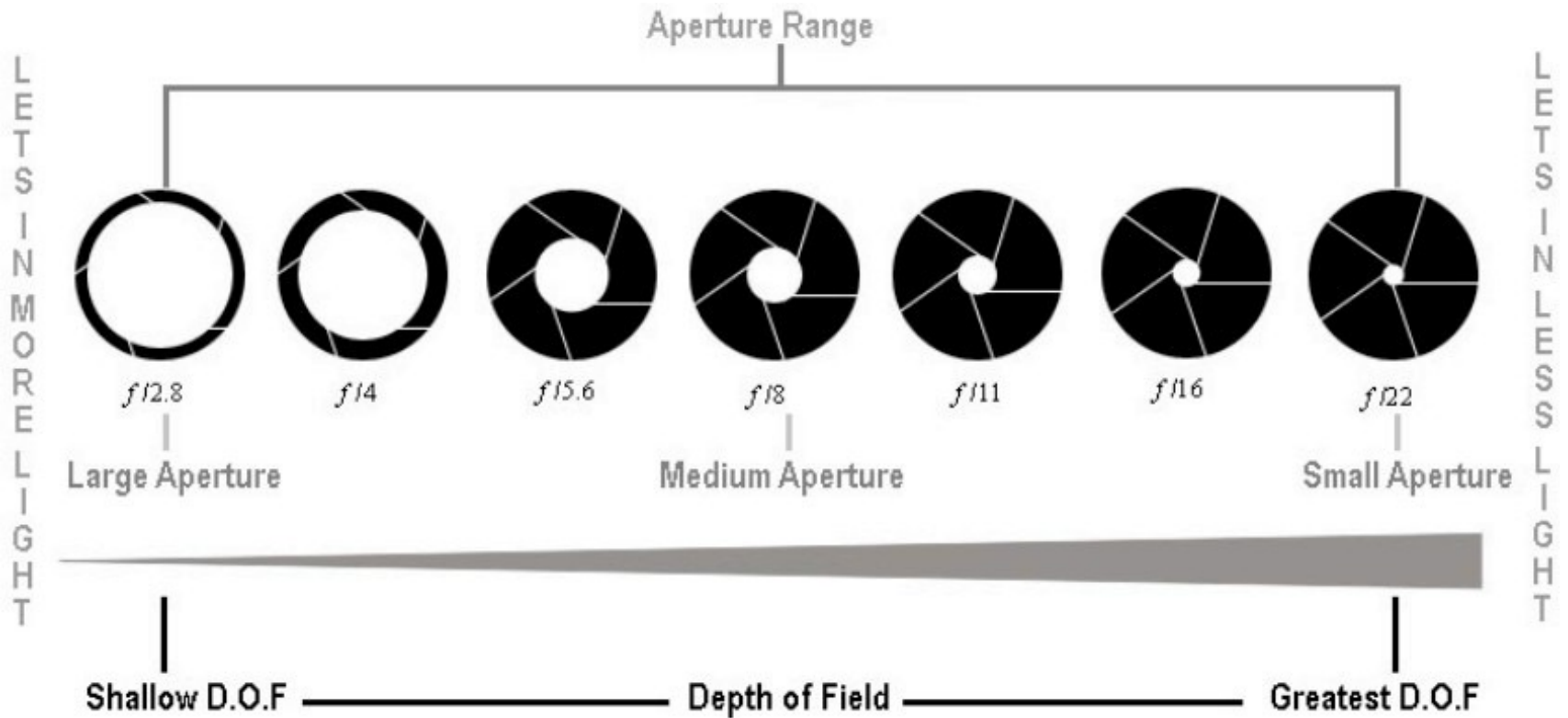
Sometimes objects can be difficult to expose properly especially when you are trying to photograph light rather than just a lit subject. Shiny, bright, reflective backgrounds can confuse an exposure meter and can cause a picture to be underexposed. Try and “bracket exposure” to find out which is best for your image. Bracketing means to take three different shots of the same scene, one slightly over exposed, one slightly under exposed and one at a “correctly exposed” setting

# Exposure Triangle

Using manual camera controls to take a well exposed image you need to set your ISO, Shutter Speed and Aperture.



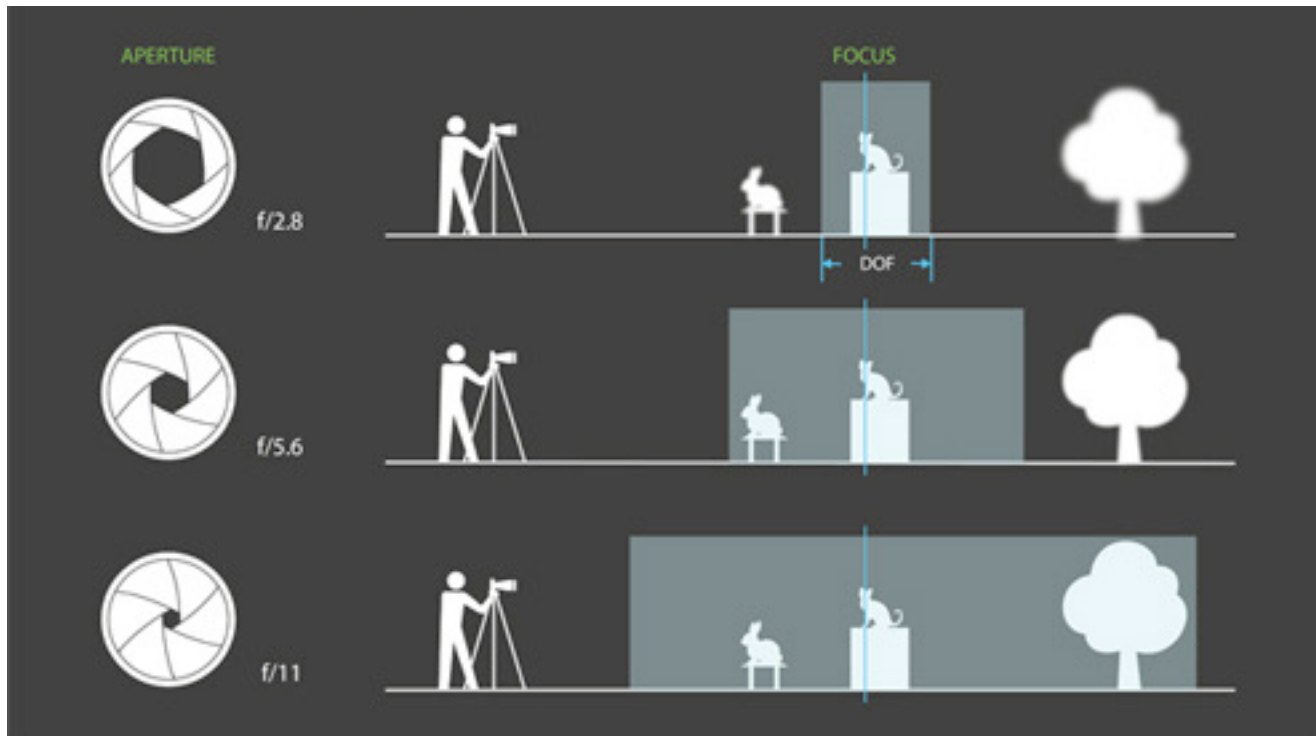
# Aperture





# Depth of Field (DOF)

In optics, particularly as it relates to film and photography, depth of field (DOF) is the distance between the nearest and farthest objects in a scene that appear acceptably sharp in an image.



# Examples of Depth of Field

Depth of Field at f8



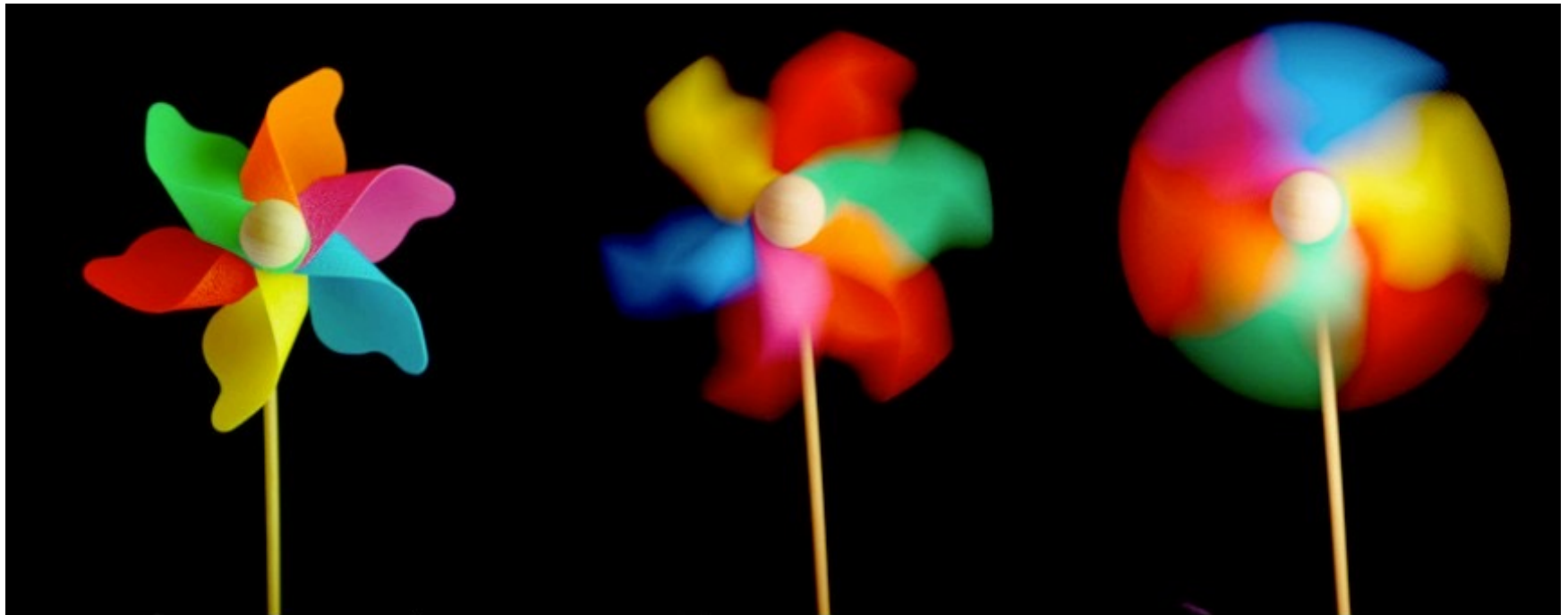
Narrow Depth of Field at f2.8



Depth of Field at f11



# Shutter Speed



1/1000    1/500    1/250

Freeze action/movement

1/125    1/60

Hand held camera  
no slower than 1/60

1/30    1/15    1/8    1/4    1/2    1    2    4    8

Movement blur - tripod required

# How Shutter Speed Effects Daylight Photography



shutter speed at  
**1/3 sec.**

## **The motion is blurred**

By blurring the motion, it looks like movement and gives a different impression from when you actually saw it.



shutter speed at  
**1/640 sec.**

## **Freezes motion**

Even a fast-moving action can be frozen in the picture. A moment of motion that even the human eye cannot see can be captured by the camera.

# Using A Slow Shutter Speed To Capture Light Movement



By using a slow shutter speed , movement will become blurred. This is very effective for this shot where the whole camera has been moved. However in low level lighting conditions, if you want to capture detail and definition, you may need to hold the camera steady by using a tripod

# How Shutter Speed Effects Studio Photography

Shutter too slow



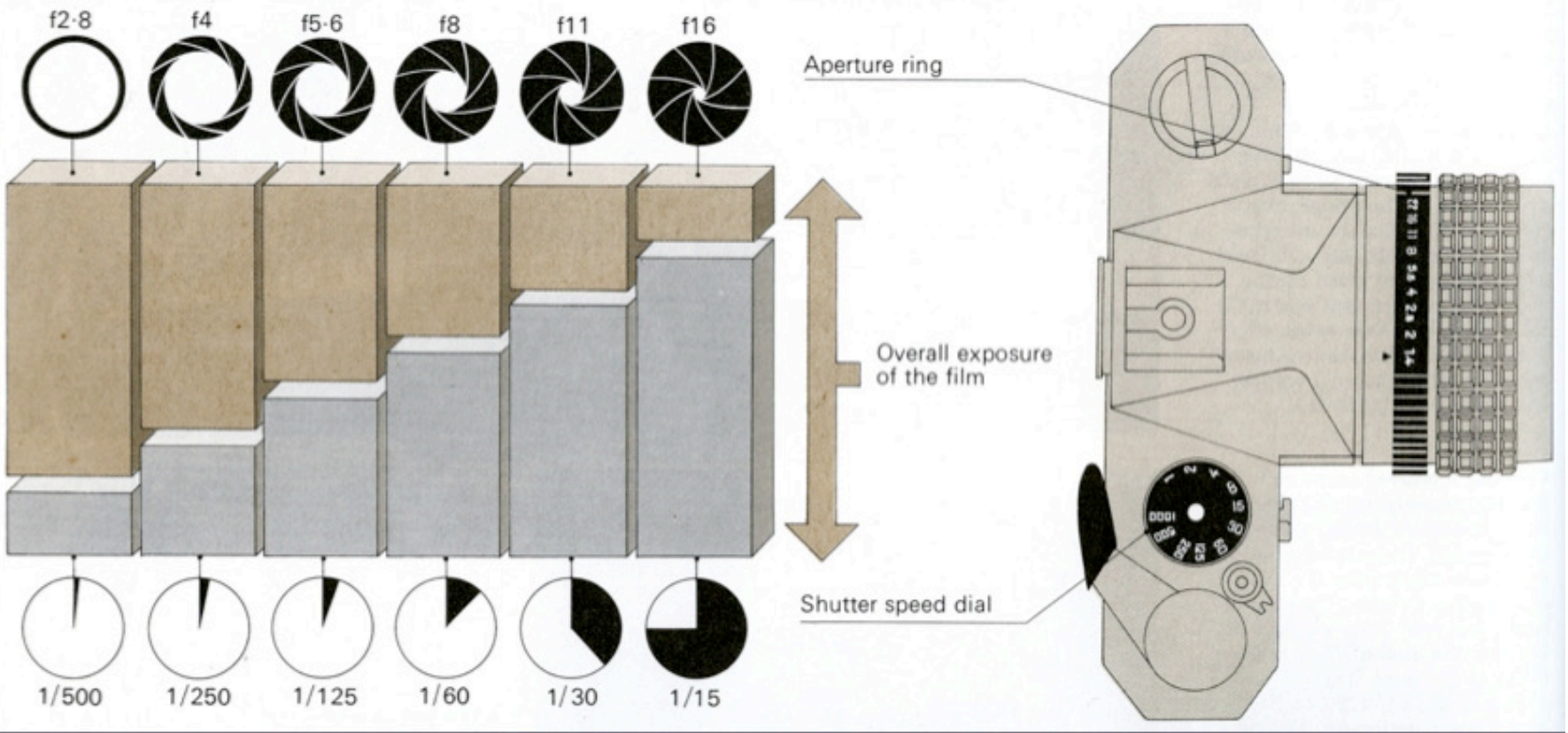
Shutter too fast



In the studio the shutter must be set at a speed to synchronise with the flash. In digital cameras this can vary but a setting of 1/125<sup>th</sup> will work.

# The Relationship Between Shutter Speed and Aperture

How aperture and shutter speeds combine



# ISO

Sun, daylight or flash



ISO 100

ISO 200

Cloudy, overcast



ISO 400

ISO 800

Night, low light, indoors



ISO 3200

Examples:

Fuji Reala 100  
Fuji Velvia 100  
Ilford FP4 125

Examples:

Fuji Pro 400  
Kodak Tri-X 400  
Ilford HP5 400

Examples:

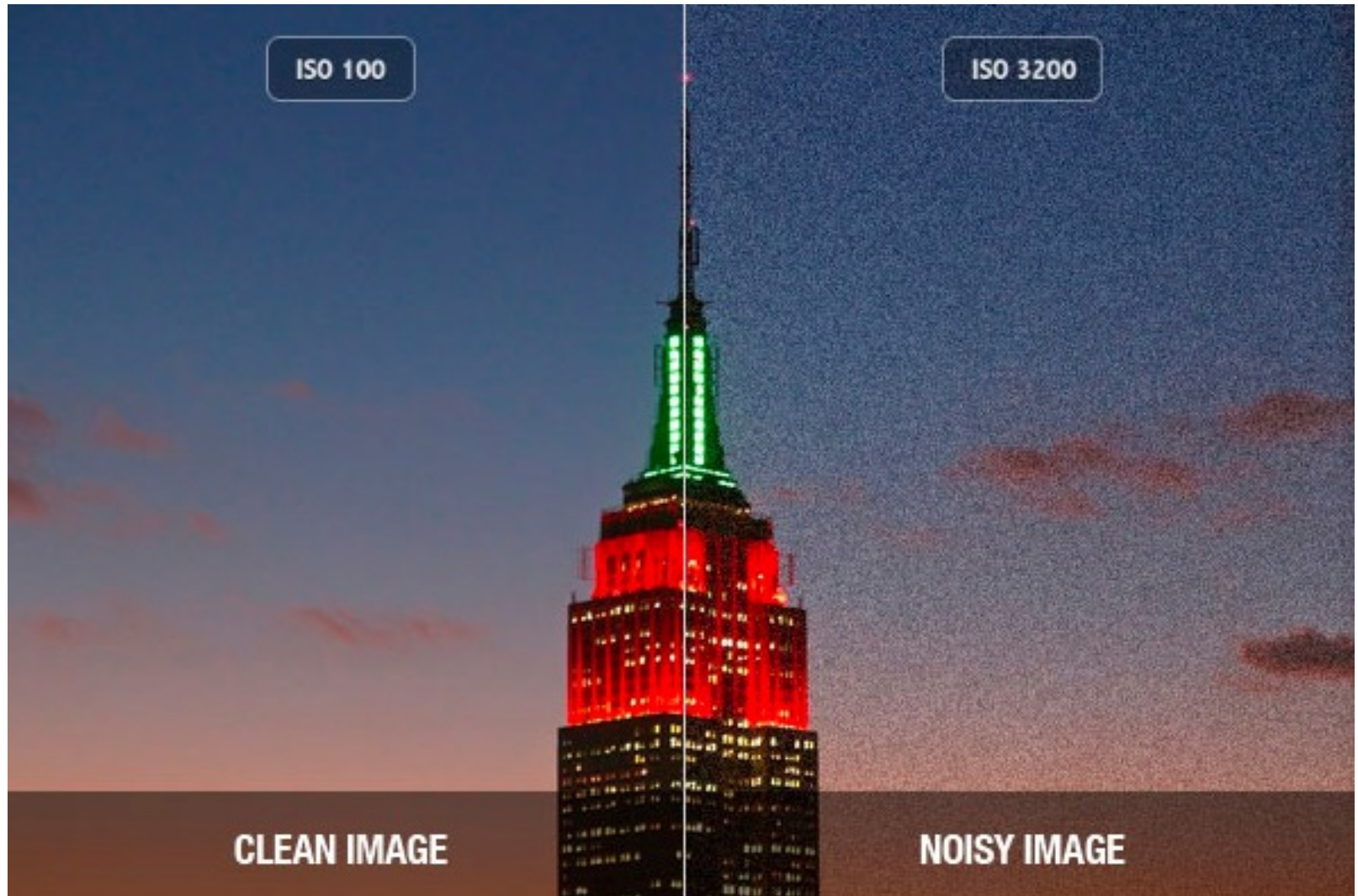
Ilford Delta 3200

**In traditional (film) photography** ISO (or ASA) is the indication of how sensitive a film is to light. It is measured in numbers (you've probably seen them on films – 100, 200, 400, 800 etc). The lower the number the lower the sensitivity of the film and the finer the grain in the shots you're taking.

**In Digital Photography** ISO measures the sensitivity of the image sensor. The same principles apply as in film photography – the lower the number the less sensitive your camera is to light and the less noise is visible.



# The Effect of ISO



# Aperture

small aperture



F32 F22 F16 F11 F8 F5,6 F4 F2,8 F2 F1,4

large aperture

# Shutter

fast shutter speed



1/1000 1/500 1/250 1/125 1/60 1/30 1/15 1/8 1/4 1/2

slow shutter speed

# ISO

low sensitivity



ISO 50 ISO 100 ISO 200 ISO 400 ISO 800 ISO 1600 ISO 3200 ISO 6400 ISO 12800 ISO 25600

high sensitivity

# Lenses

There are many different lenses that are available for our Nikon and Canon cameras. For photographing 3D work it is tempting to use a wide angle lens, particularly if you are working in a small space. However these lenses will distort your work. A lens of 50-70mm focal distance will work best. Additionally a 120mm or 60mm macro/micro lens will help capture close up details.



AF-S Nikkor 50mm F1.4



AF Nikkor 35-70mm F2.8



AF Micro Nikkor 60mm F2.8D



AF-S Nikkor 24-120mm F2.8D

# Examples Of Macro and Zoomed Images

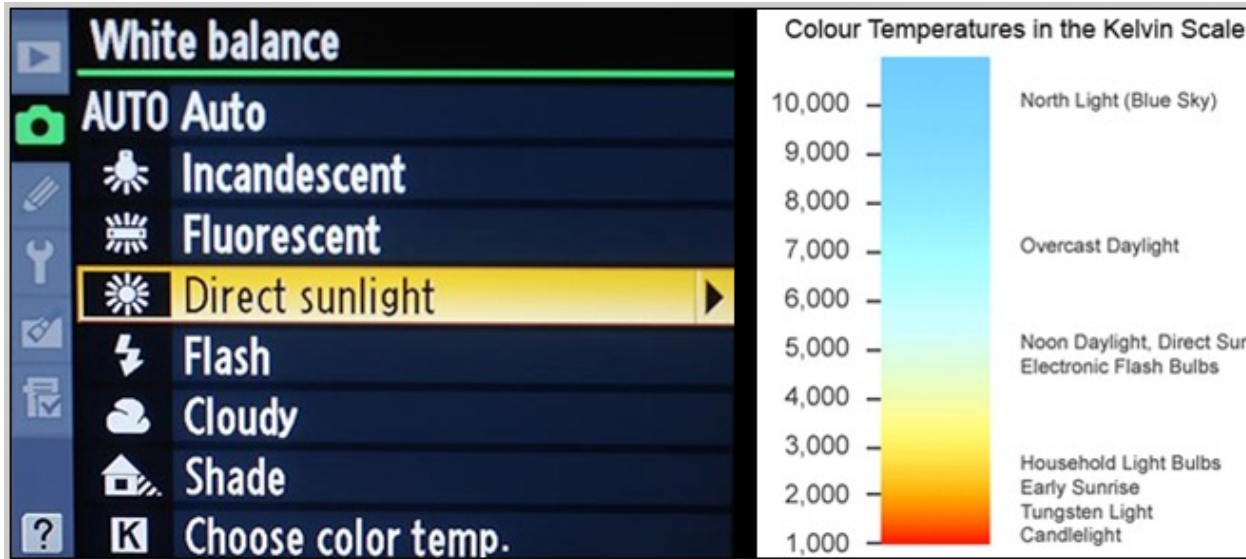


The zoom lens allows you to capture close up details of an object and has a wide enough aperture to blur the background.

The 60mm Micro allows you to place your camera very close to an object to capture abstract angles



# White Balance



White balance (WB) is the process of removing unrealistic color casts, so that objects which appear white in person are rendered white in your photo.



# White Balance Comparisons



Tungsten



Fluorescent



Daylight



Cloud



Shade

For the **manual white balance** here is a series of the same subject but using different settings for white balance. The source of light with warmest colours – tungsten light – results in the strongest correction towards cooler colours and on the opposite end it is “shade” giving the strongest adjustment towards warmer colours. This means that if the lighting remains the same (daylight) in all photos but the camera White Balance settings are changed to those shown, a colour cast will appear on your photos

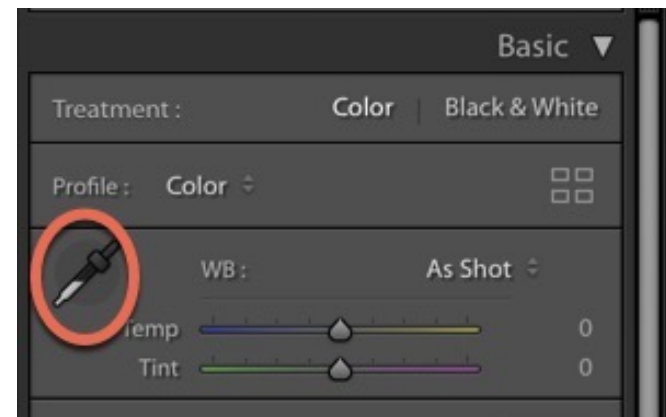
# Using a Colour Checker or Grey Card



Using the Colour Checker or Grey Card ensures the correct colour of your images and can fine tune any slight white balance problems .

Set up your camera and make all adjustments to the camera controls or lighting before you start. Place the Colour Checker or Grey card into the frame next to the subject. Take a photo. Now you have your reference image. For now, you can remove the card from the frame and proceed with your photo session. If at any time either the lighting changes or you change the camera controls then take another reference photo.

The Grey Card or the grey squares in the Colour Checker card are set to 18% grey which is what your camera meters for. You can use this shot to get the correct White Balance in Lightroom. To do this, take the eyedropper icon and select an area on the grey card. It will choose the right white balance number for the lighting conditions you were shooting in. You can then sync this number to all your photos.



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