Getting The Most From Your Camera

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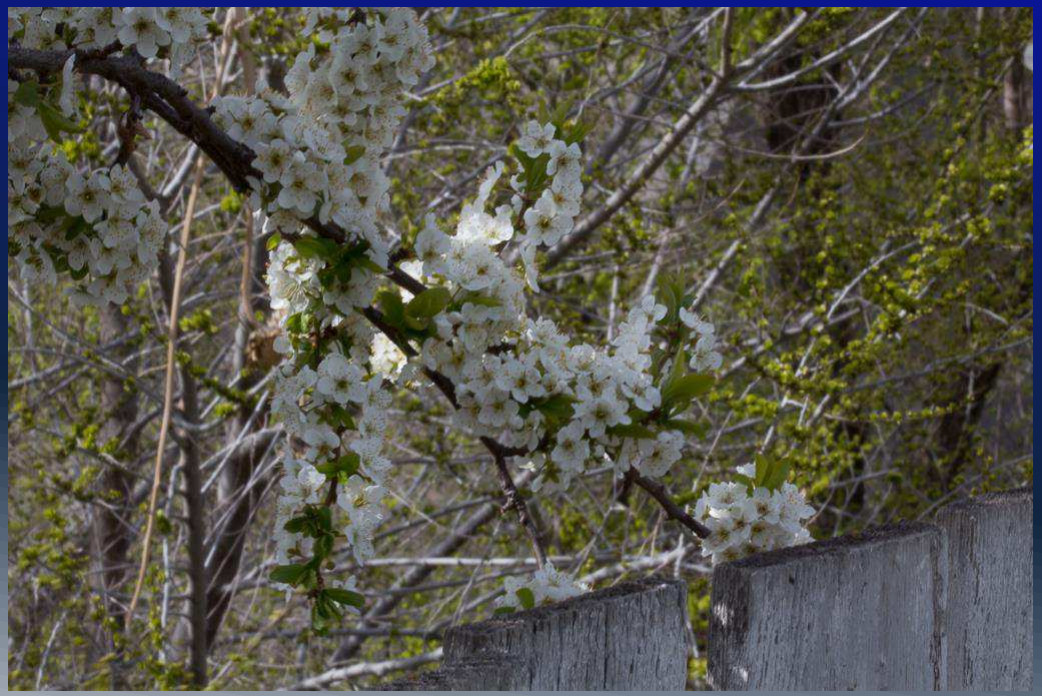
Kamloops Photo Arts Club
DSLR Course

Did you see this image but your camera gave you this one?

<- This is what you hoped for…

This is what you got ->

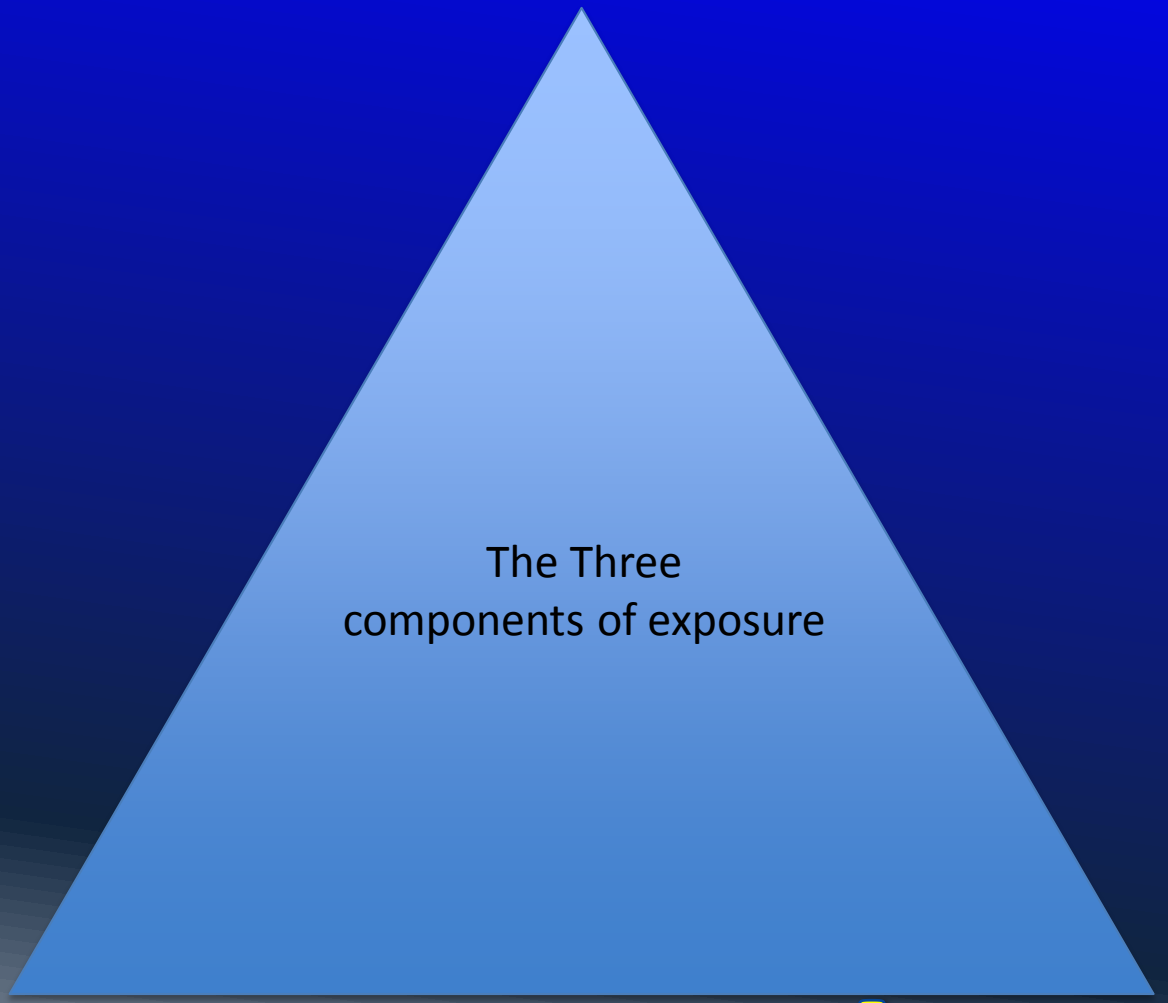


But got this “car wreck” instead

Today's Goals

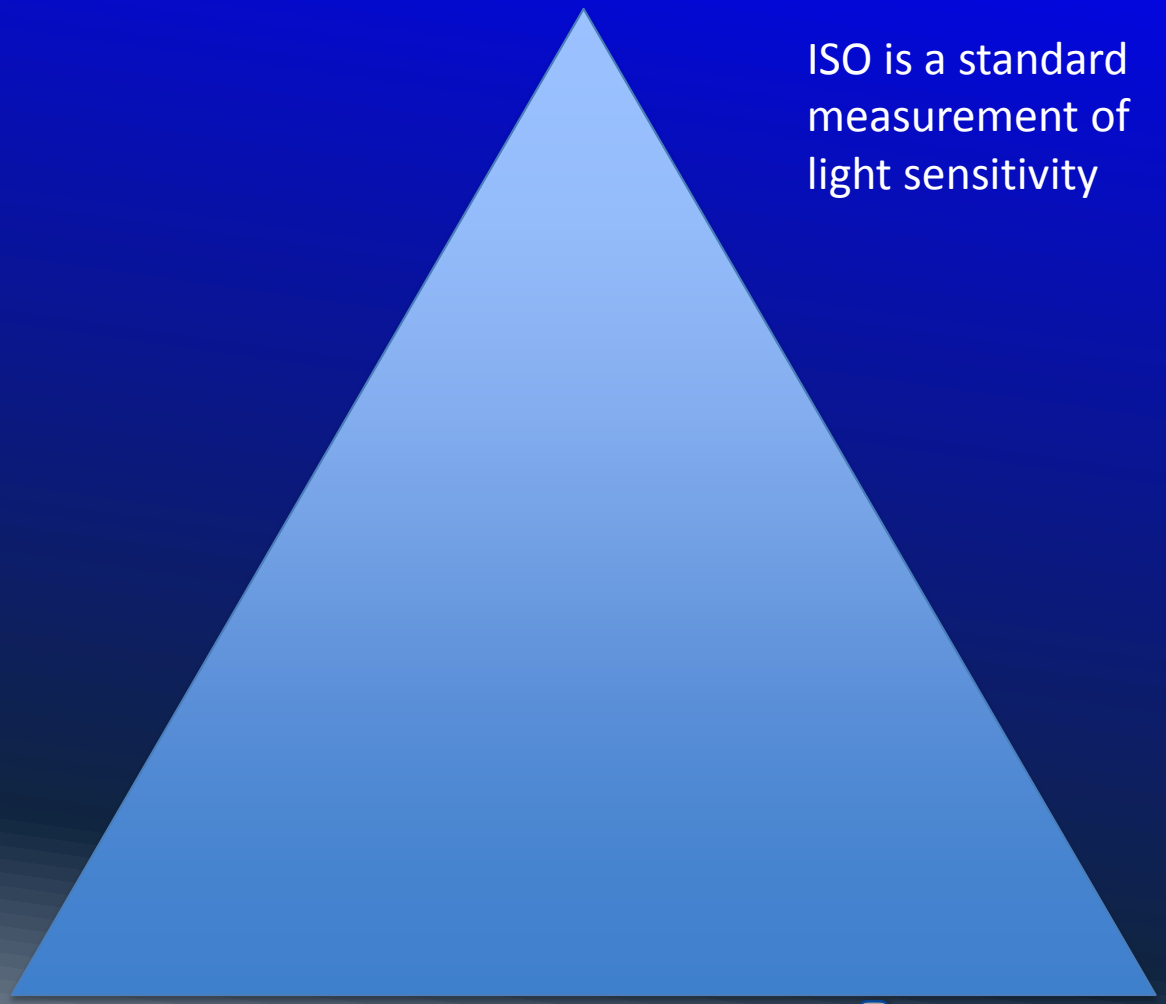
- Gain basic understanding of exposure: ISO, Shutter speed and Aperture.
- Exposure compensation: beyond grey
- Defining white balance & how to change it.
- Reading histograms to judge exposure.

ISO

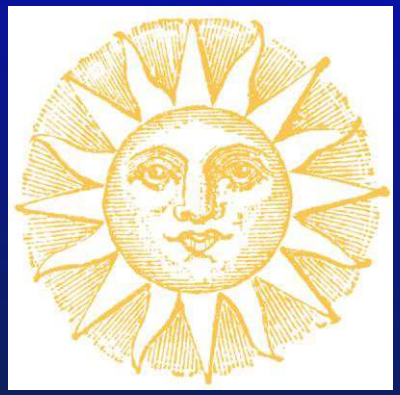


Shutter

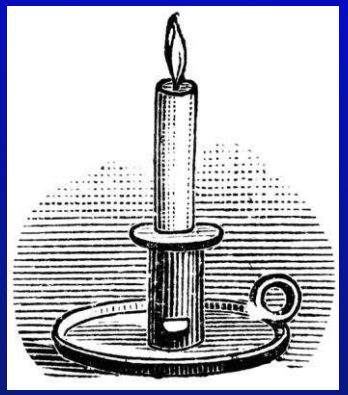
Aperture



ISO is a standard measurement of light sensitivity



ISO



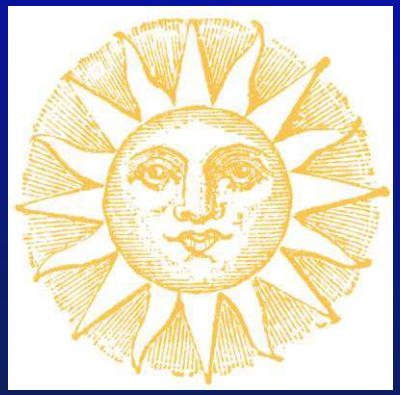
100	200	400	800	1600	3200	6400

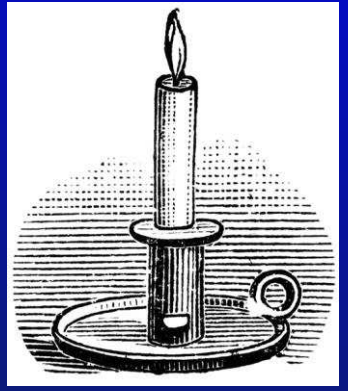
The lower ISO numbers are commonly used for images outside, in daylight hours.

The higher numbers are used inside where light levels are generally lower.

Graphics courtesy Google.ca

When you double the ISO number you double the exposure. When you half the number, you half the exposure.
"2x or ½"





100	200	400	800	1600	3200	6400

EXAMPLES

800 ISO is 2X as sensitive as 400 ISO.

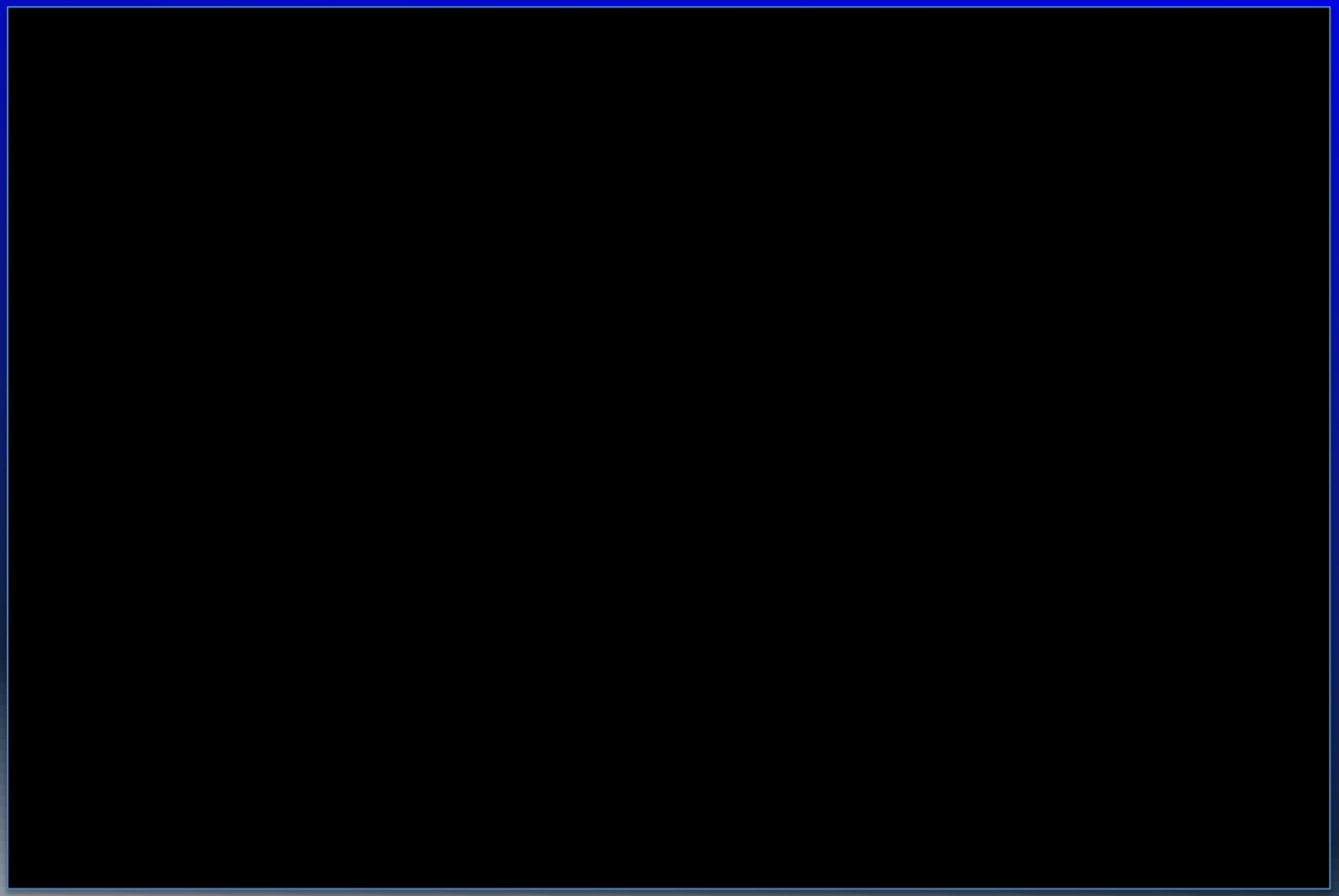
100 ISO is ½ as sensitive as 200 ISO.

ISO

Shutter speed is the length of time your sensor is exposed to light.

Shutter

Aperture



This is what the inside of your camera looks like.

Taking a photo is like opening a door (the shutter) to let light expose the sensor.

Courtesy Google.ca

Shutter Speeds

are expressed in seconds or fractions of a second.

1/30	1/60	1/125	1/250	1/500	1/1000

2”	1”	1/2	1/4	1/8	1/15

Shutter Speeds

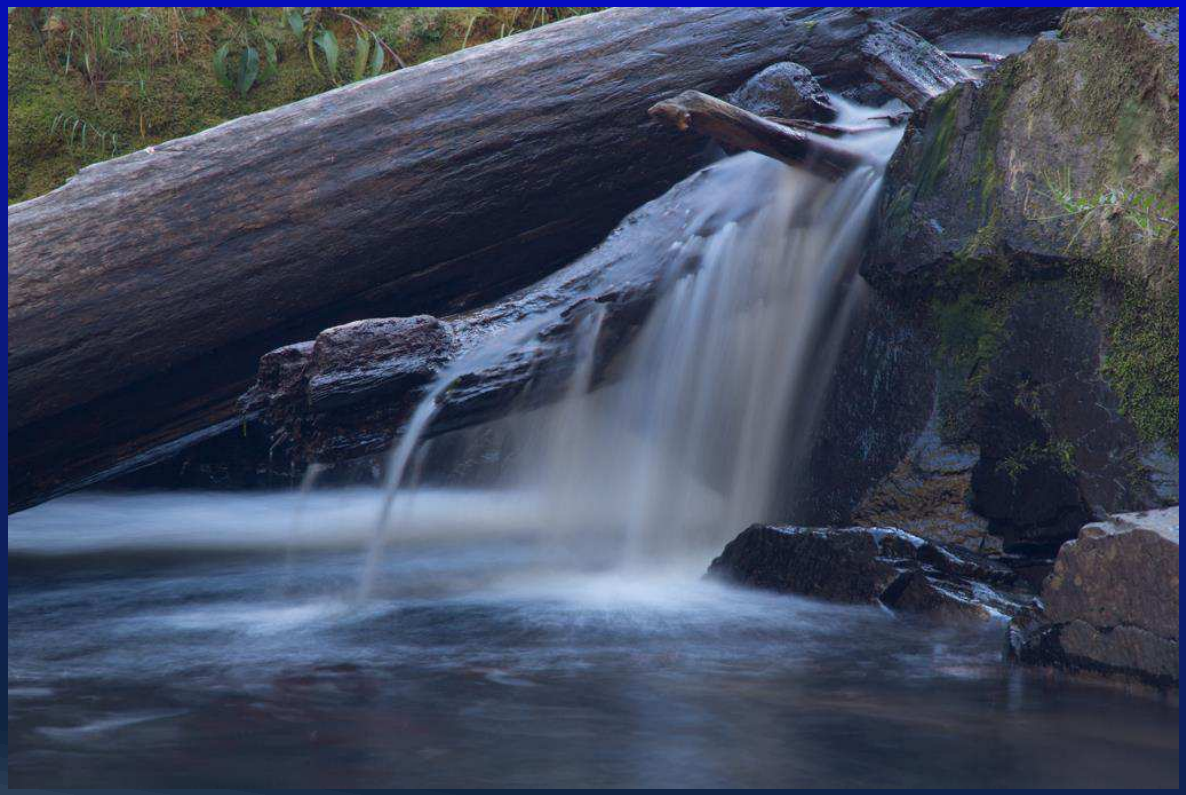
1/60	1/125	1/250	1/500	1/1000	1/2000

The higher the shutter speed, the more moving subjects will be “frozen”.

“2x or ½”

High shutter speeds freeze acton.

Shutter Speeds

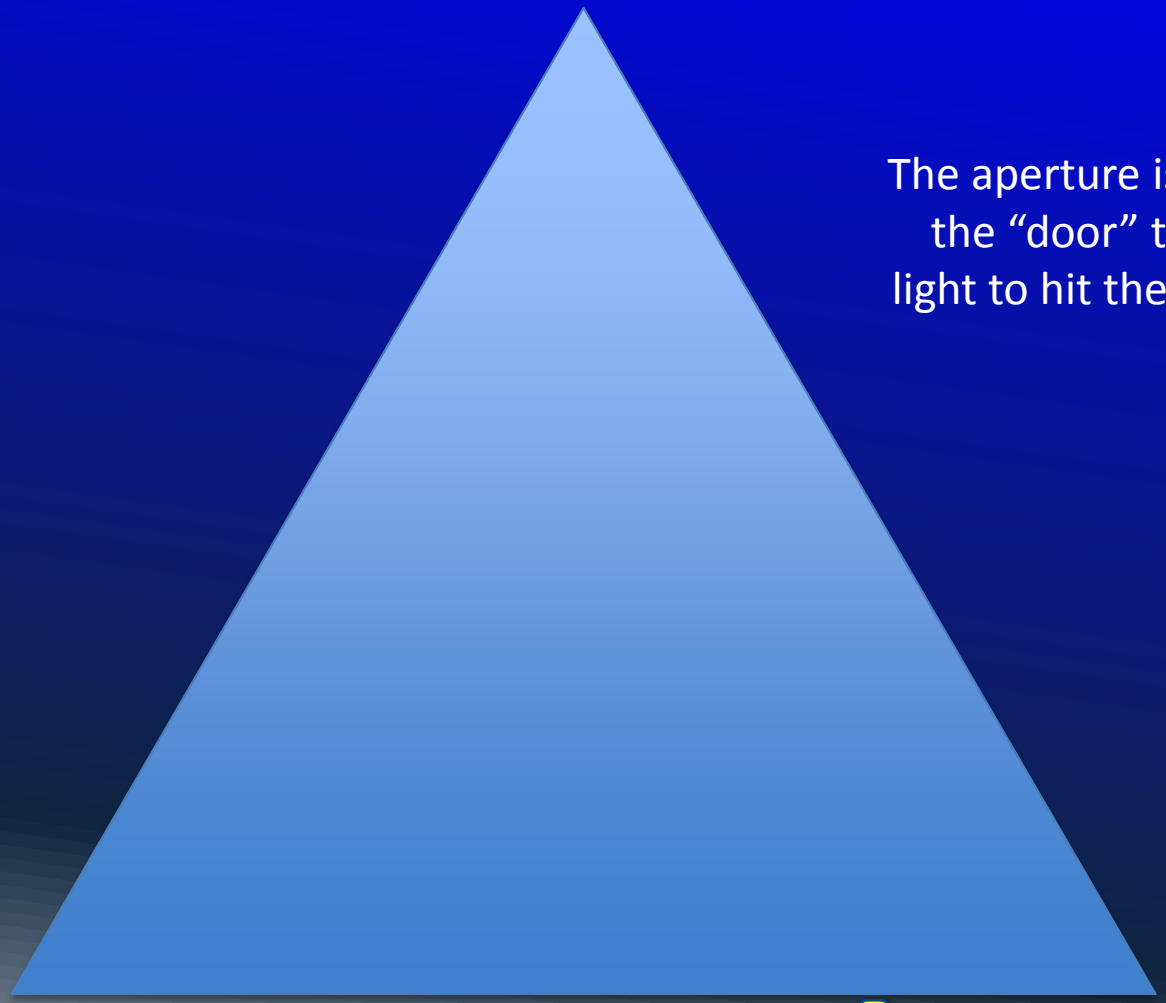


4”	2”	1”	1/2	1/4	1/8

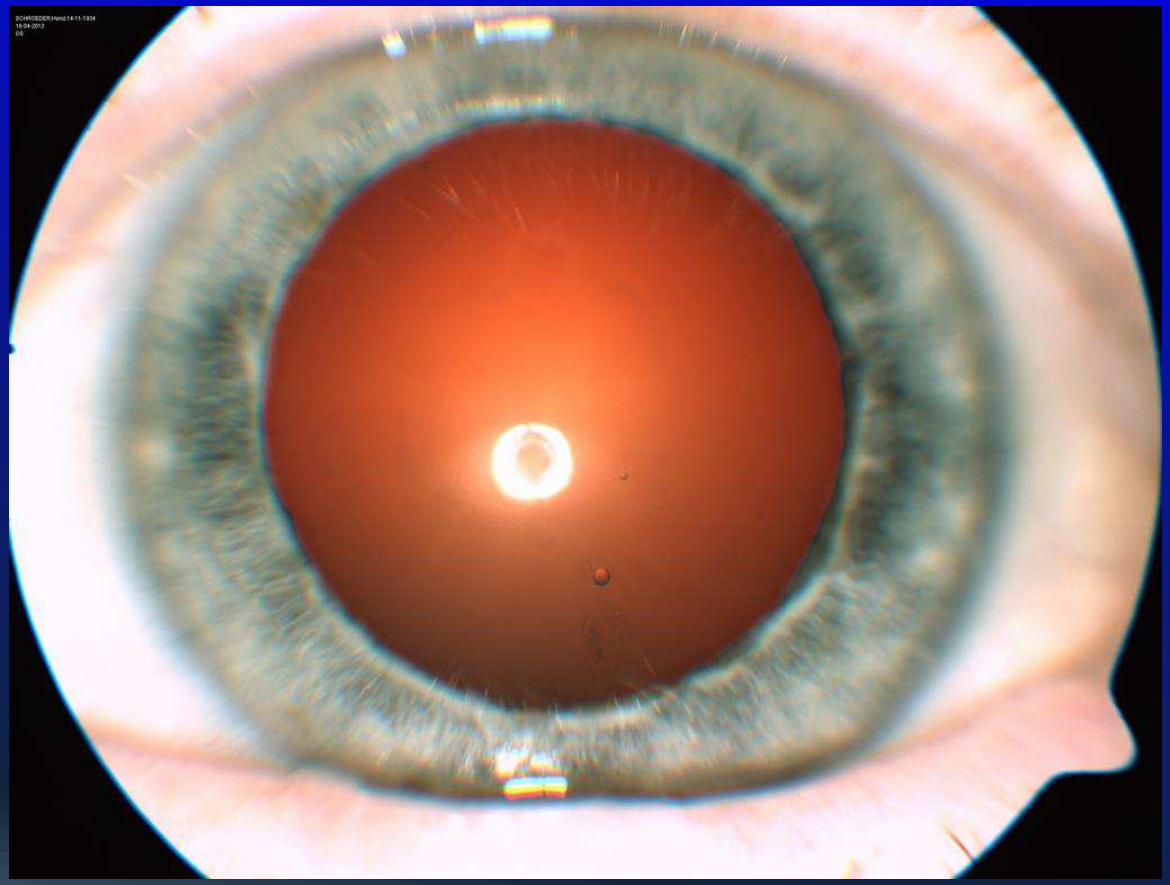
The lower the shutter speed, the more moving subjects will be “blurred”.

This exposure was between 30 – 40 seconds.

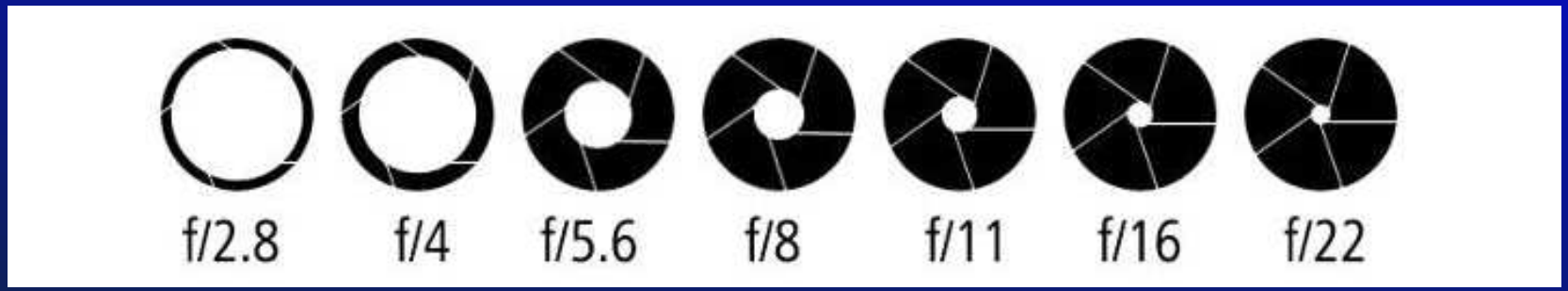
Courtesy the Big Picture project



The aperture is the size of the “door” that permits light to hit the the sensor.



Your camera lens contains a flexible aperture much like the human iris.
It can be adjusted in size as exposure requires.



f stop numbers INCREASE

as the actual size of the aperture DECREASES.

Graphic courtesy of www.danfergus.com

“2x or ½”

f stops							
2.8	4	5.6	8	11	16	22	32

f 5.6 lets in 2x the light of f 8

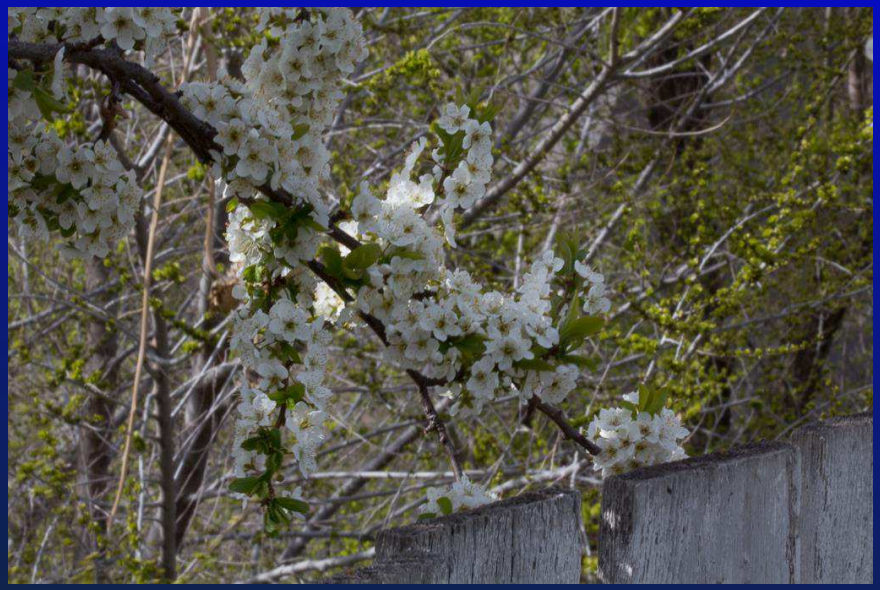
f 16 cuts the light in half from f 11

Notice the differences in the next series of photos. Each is taken at a different *ƒ* stop, between f 32 & f 2.8


f32


f8


f2.8



1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15
2.8	4	5.6	8	11	16	22	32

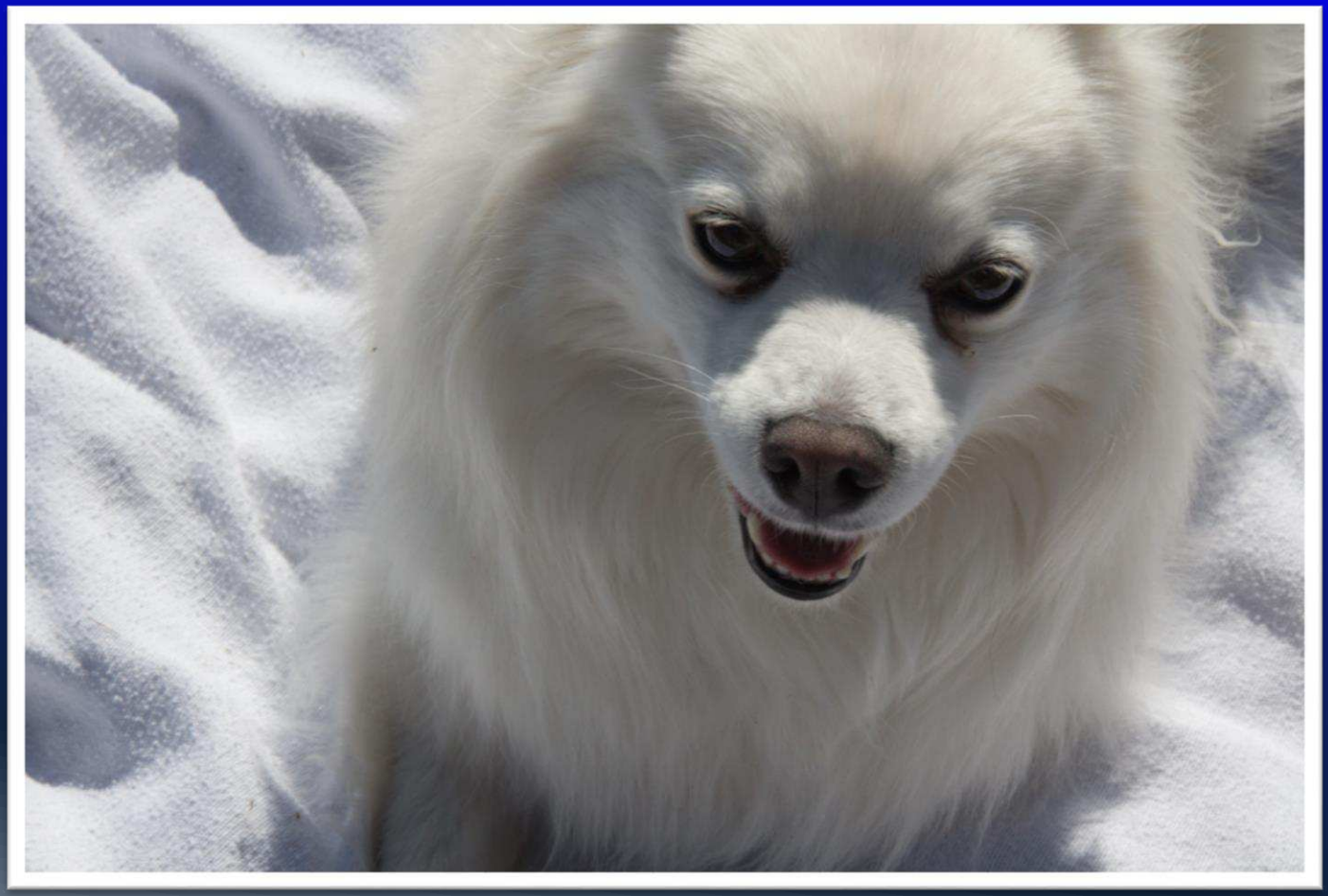
Each of these combinations is the same exposure

18% grey
&
exposure compensation.

Why isn’t every picture perfect?

The camera produced this exposure. Camera was set on [P]

This image was under exposed by 2 stops.



The camera gave this exposure. Camera was set on [P]

This image was over exposed by 1 1/3 stops.

Under expose predominantly black subjects

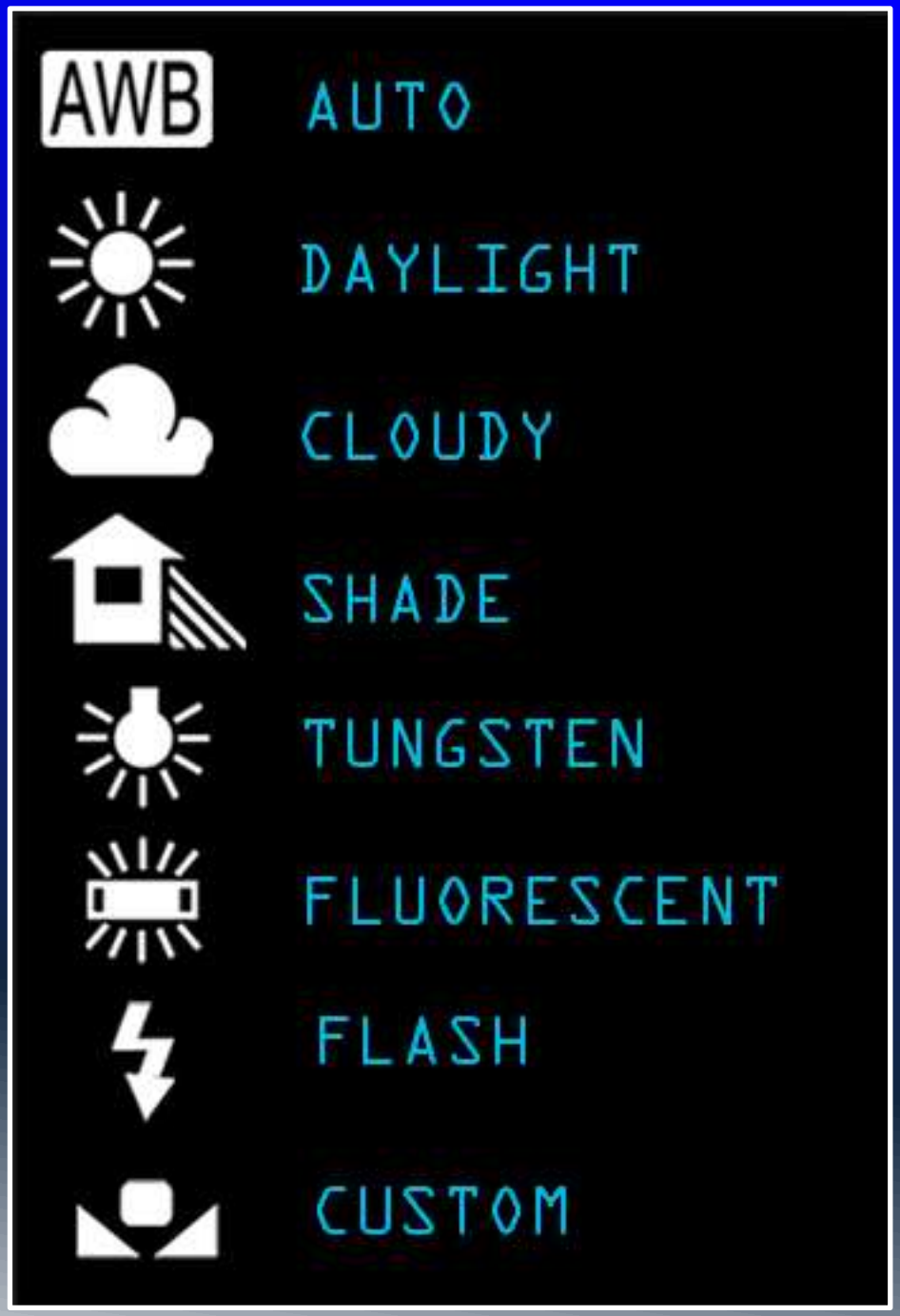
Over expose predominantly white subjects

White Balance

White Balance

Light also has colour. Picture the warm tones of a sunset versus the coolness of the light in the shadow of a building.

Your camera has a menu similar to this with preset corrections for colour balance in a variety of situations.



Daylight

Open Shade

Sunlight & flash

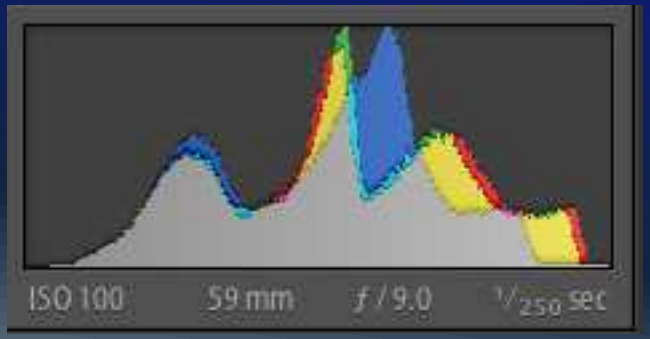
Glow sticks

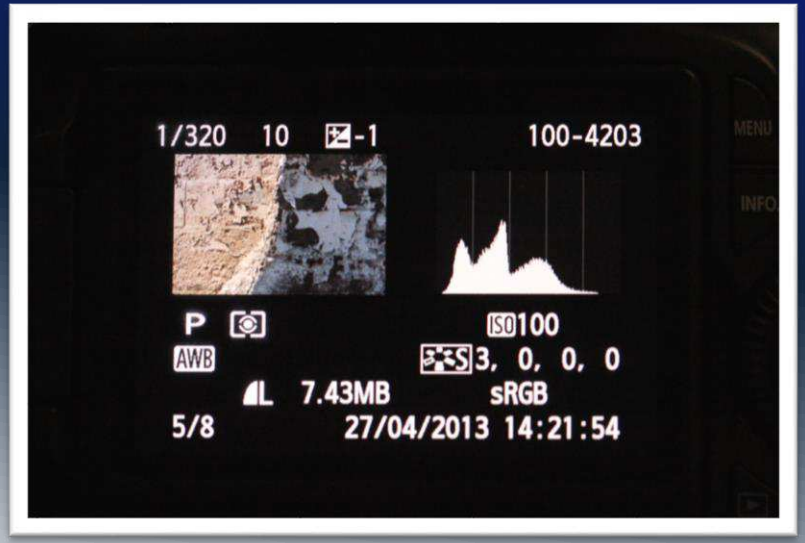
LED flashlight + flash + time

Natural light

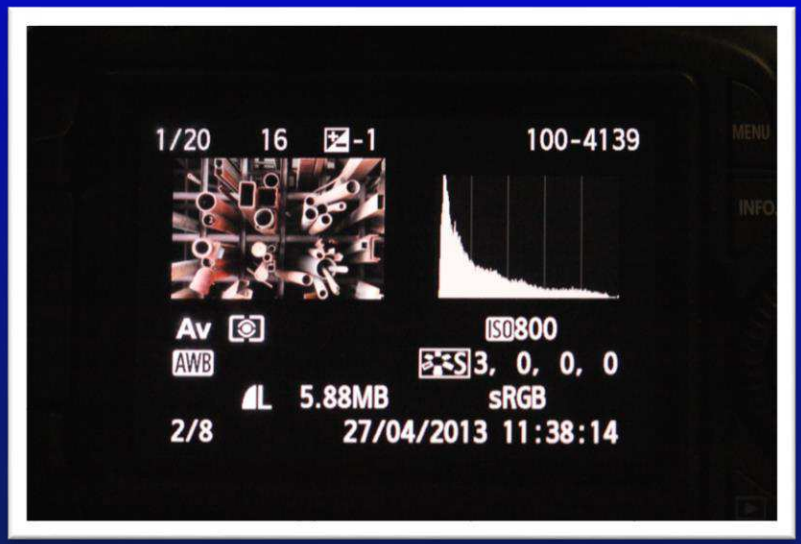
Natural light + on-camera flash

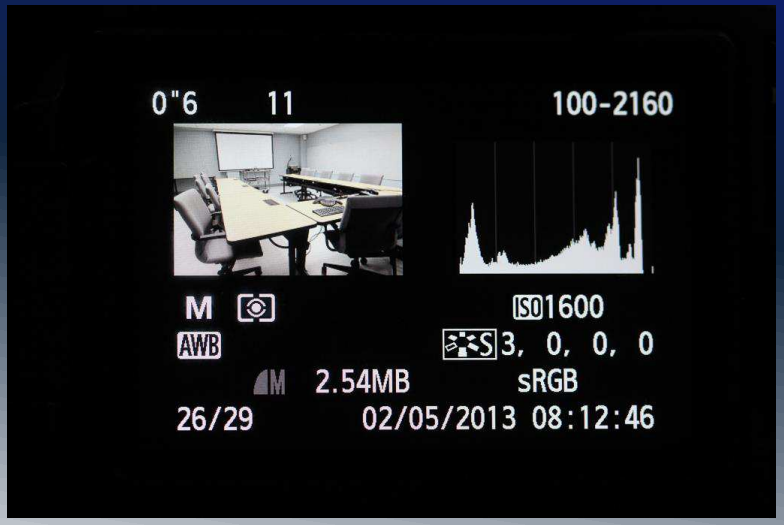
HISTOGRAMS




1/320 10 -1
100-4203
MENU
INFO
P
ISO100
AWB
3, 0, 0, 0
L 7.43MB sRGB
5/8 27/04/2013 14:21:54

Note the position of the histogram peaks in this series of images, ranging from under to overexposed.


1/20
16
-1
100-4139
MENU
INFO
Av
ISO800
AWB
3, 0, 0, 0
L 5.88MB
sRGB
2/8
27/04/2013 11:38:14


0"6 11
100-2160
M
AWB
ISO1600
3, 0, 0, 0
M 2.54MB
sRGB
26/29
02/05/2013 08:12:46


4"
11
100-2163
M
ISO1600
AWB
3, 0, 0, 0
M
1.58MB
sRGB
29/29
02/05/2013 08:13:16

Now let’s go out and take some pictures!