JORDAN SCOTT
ART

WELCOME

Digital Photography for Beginners
Getting Off Auto!

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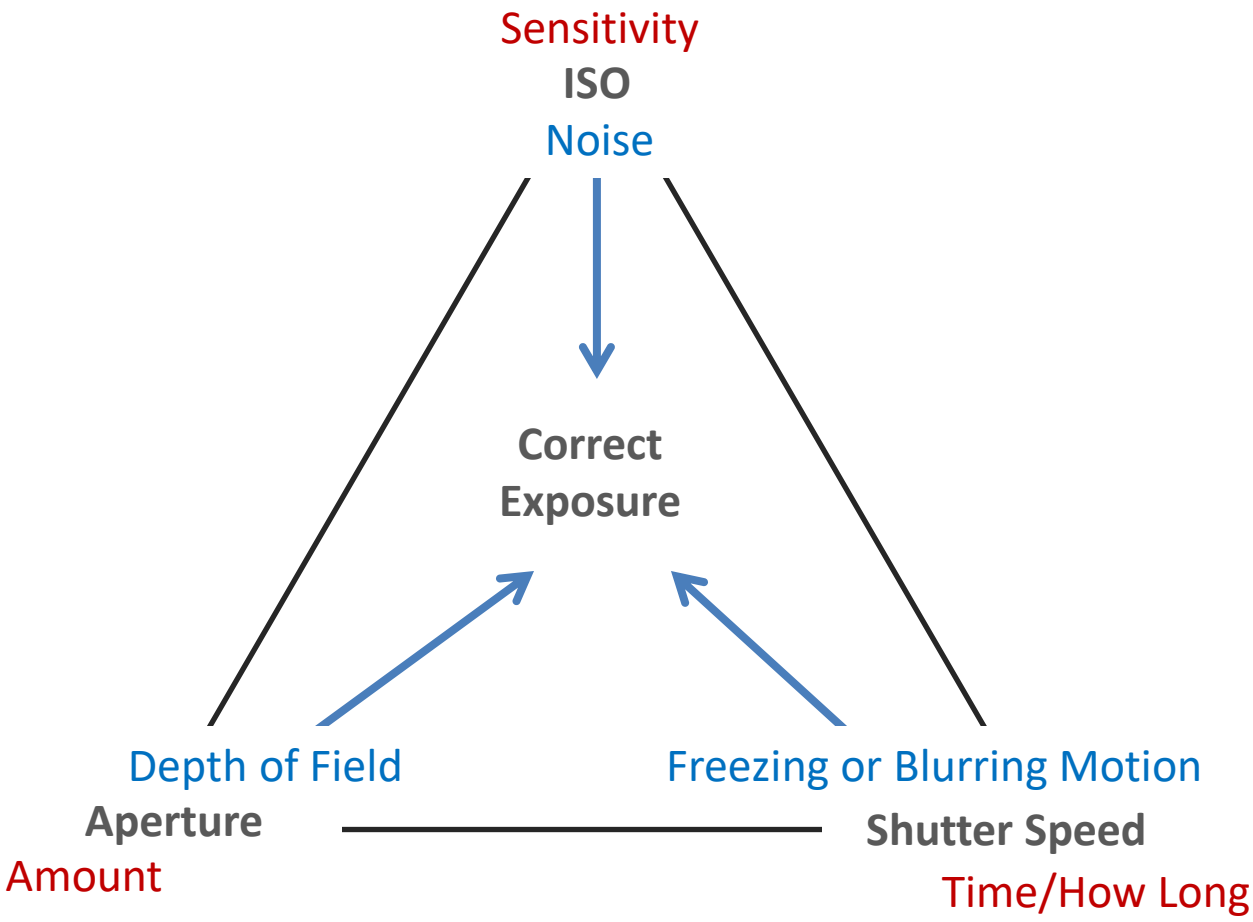
http://www.jordanscottart.com/student-resources.html

Password: f8

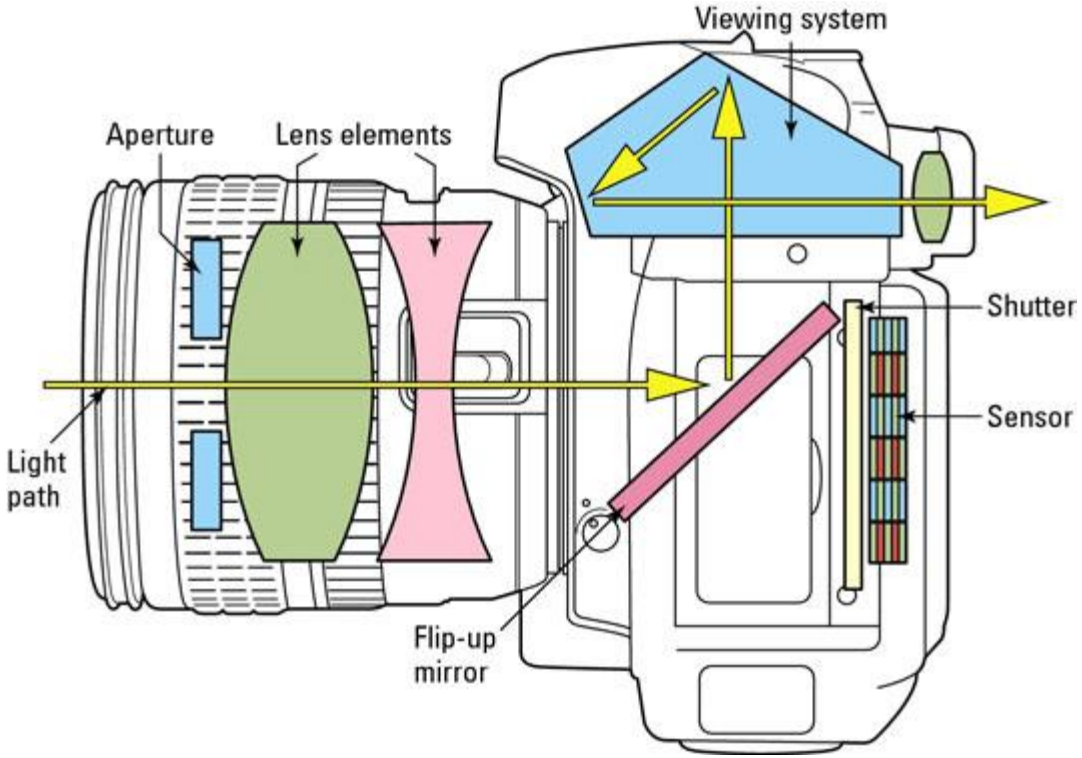
“The single most important component of a camera is the twelve inches behind it.”

– Ansel Adams

THE EXPOSURE TRIANGLE



HOW A DIGITAL CAMERA WORKS



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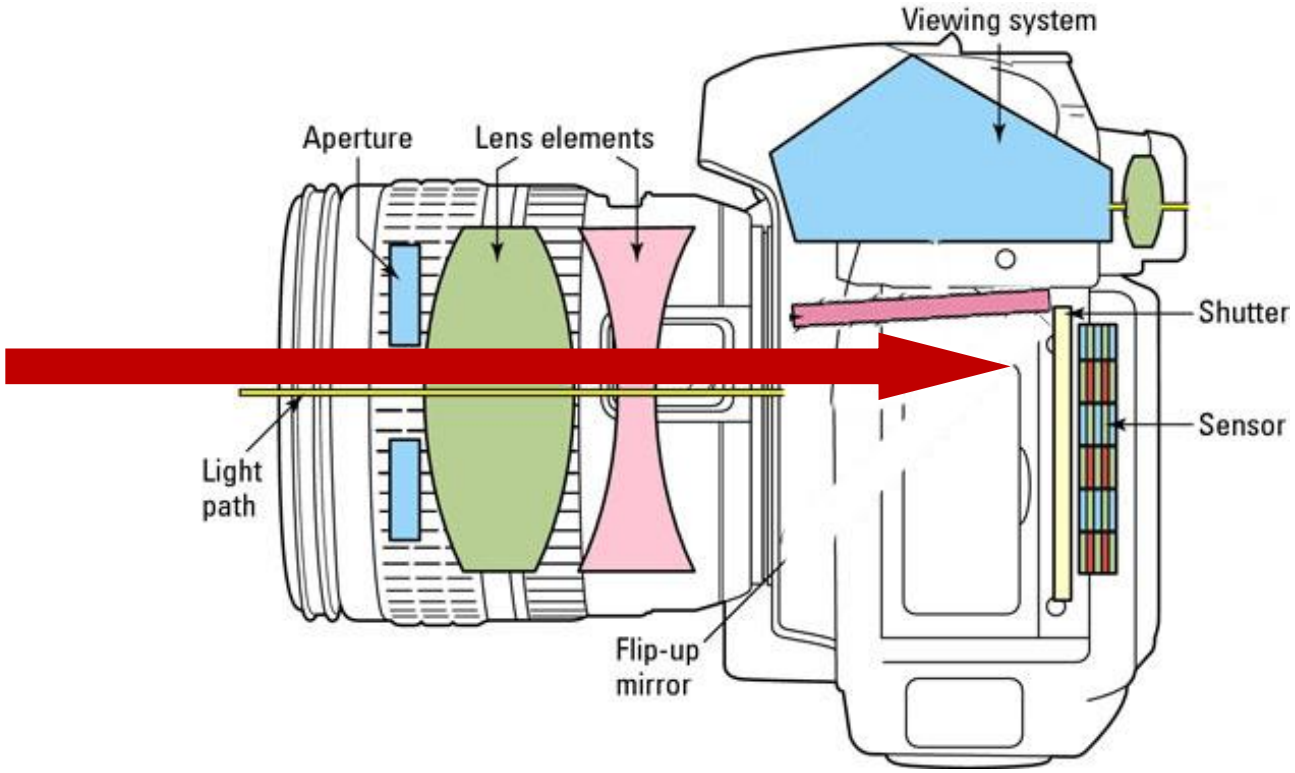
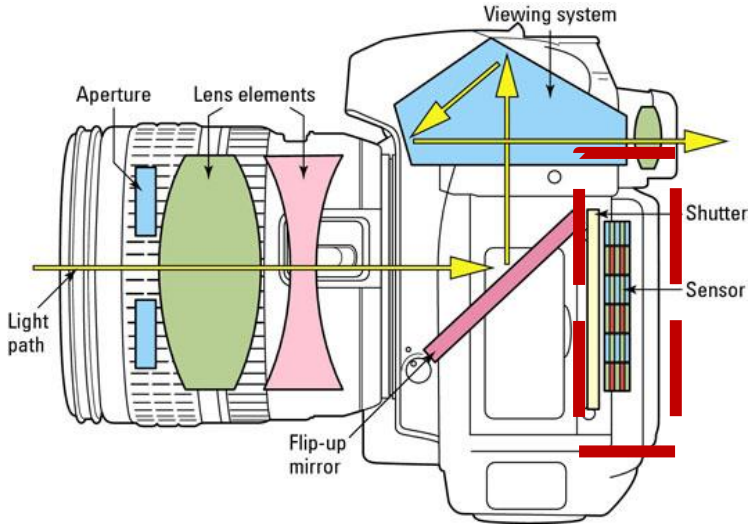


THE CAMERA IMAGE SENSOR



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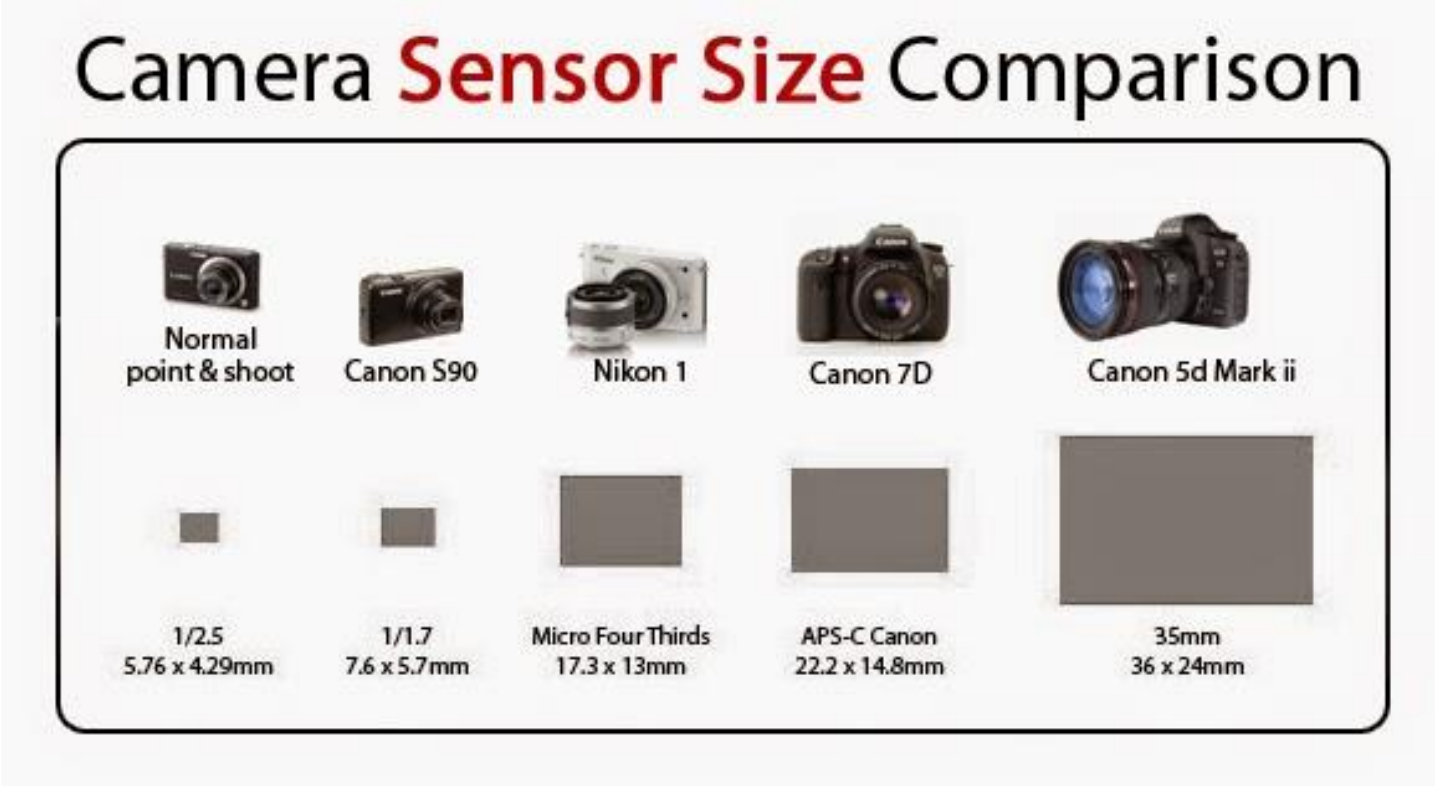
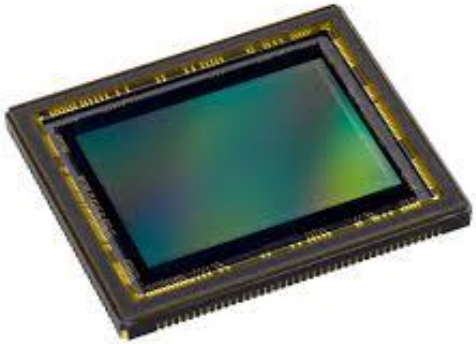
THE CAMERA IMAGE SENSOR



THE LCD SCREEN

THE SENSOR + LCD SCREEN



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IMPORTANT CAMERA SET-UPS

File Type: JPEG vs. RAW

Dioptric Adjustment
ISO (temporarily at 400)
White Balance on Auto
Drive Mode
Auto Focus/Focus Points

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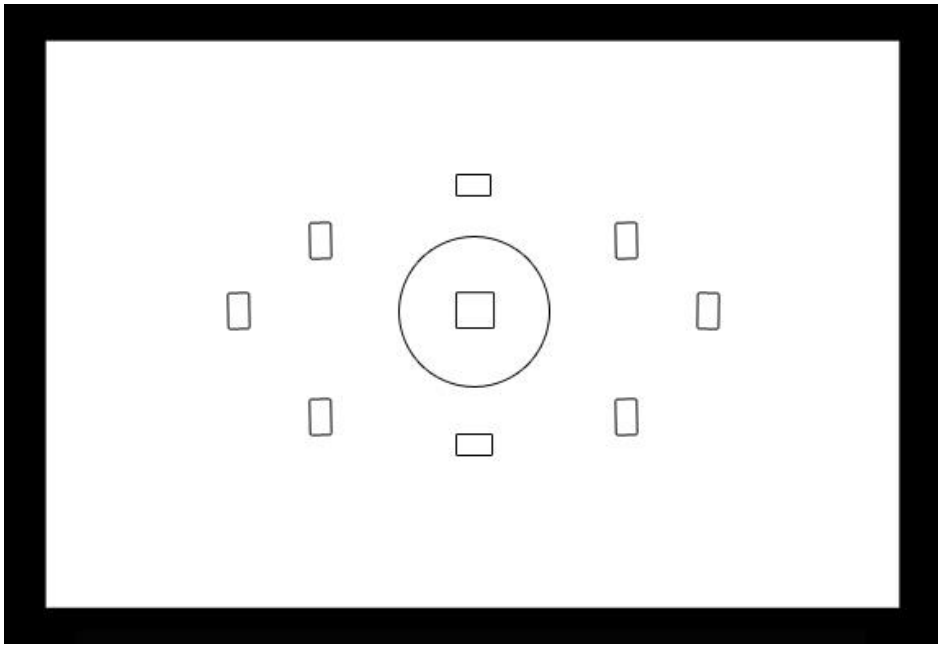
IMPORTANT CAMERA SET-UP

Auto Focus/Focus Points



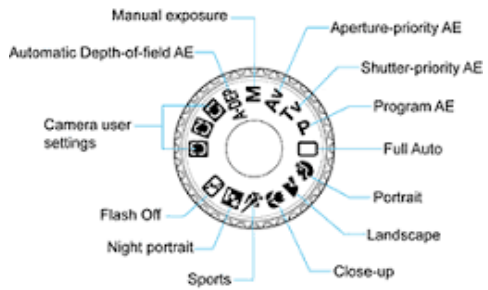
HOLDING THE CAMERA

Thumb on the Top

Thumb on the Bottom

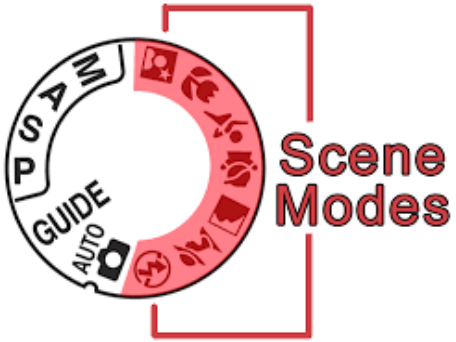
IMPORTANT CAMERA SET-UP

Mode Dial



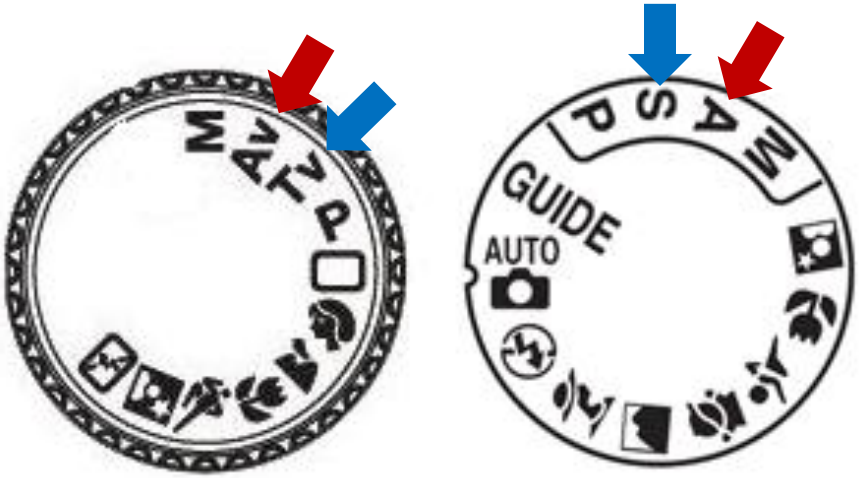
CANON

NIKON



IMPORTANT CAMERA SET-UP

Mode Dial

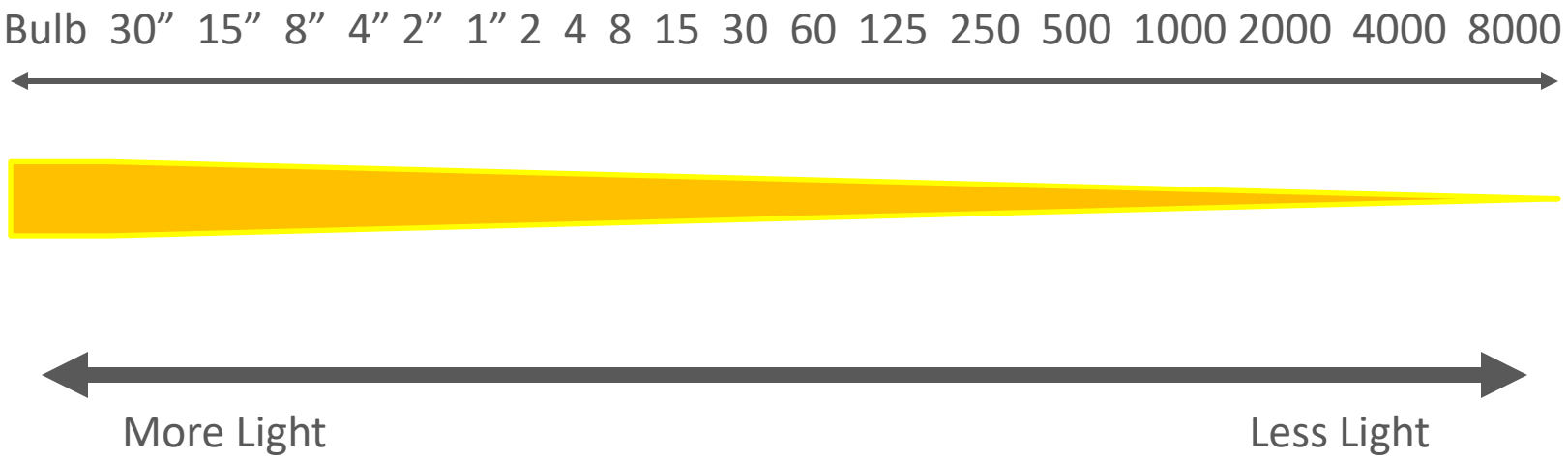


CANON NIKON

AV or A = Aperture Priority

TV or S = Shutter Priority

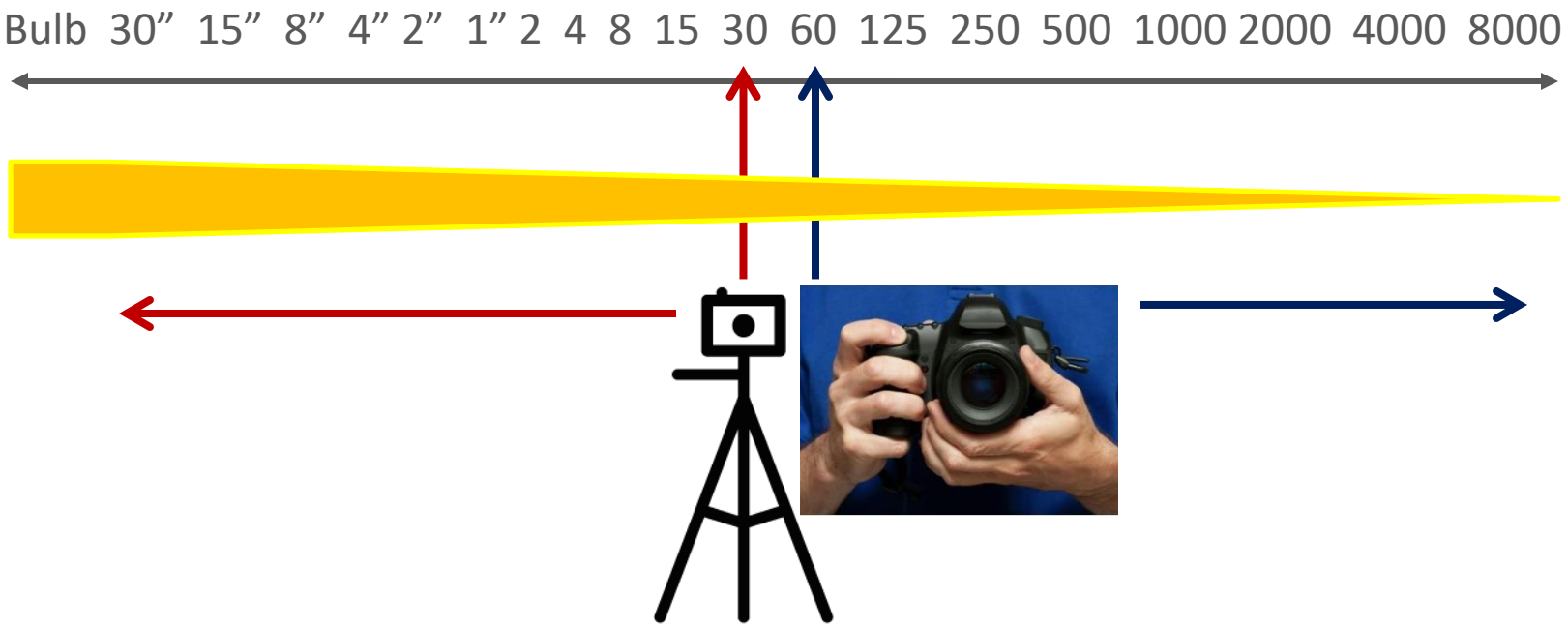
SHUTTER SPEED = TIME



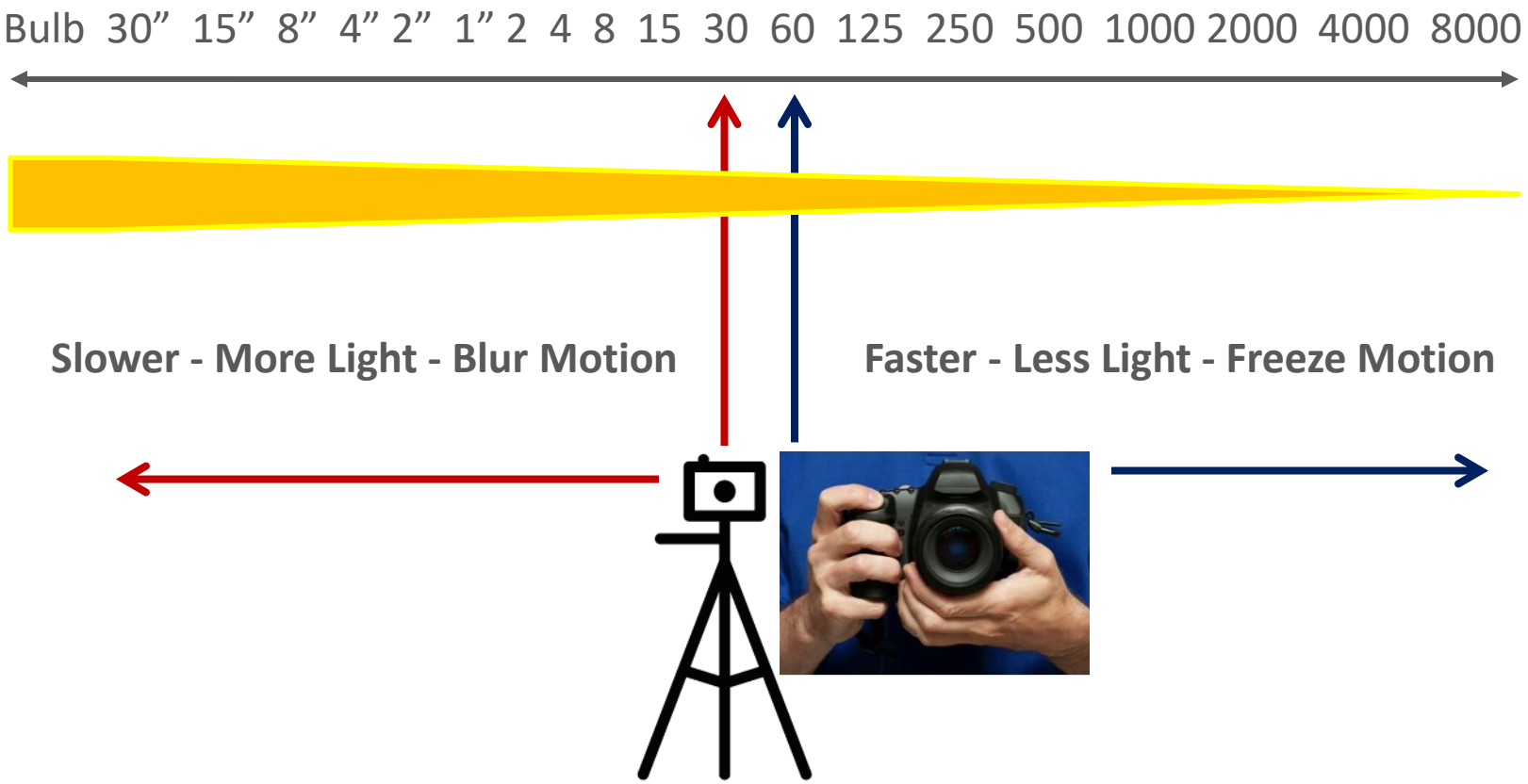
Stops of Light

Each full stop = halving or doubling of light

SHUTTER SPEED



SHUTTER SPEED



SHUTTER SPEED

Bulb 30” 15” 8” 4” 2” 1” 2 4 8 15 30 60 125 250 500 1000 2000 **4000 8000**

Slower - More Light - Blur Motion **Faster - Less Light - Freeze Motion**

Freezing really fast moving objects

SHUTTER SPEED

Bulb 30” 15” 8” 4” 2” 1” 2 4 8 15 30 60 125 250 500 **1000 2000** 4000 8000

Slower - More Light - Blur Motion **Faster - Less Light - Freeze Motion**

Freezing fast motion like jumping dog, sports or fast vehicle

SHUTTER SPEED

Bulb 30” 15” 8” 4” 2” 1” 2 4 8 15 30 60 125 250 **500** 1000 2000 4000 8000

Slower - More Light - Blur Motion **Faster - Less Light - Freeze Motion**

Minimum for relatively fast human action like some sports dancing

SHUTTER SPEED

Bulb 30” 15” 8” 4” 2” 1” 2 4 8 15 30 60 125 **250** 500 1000 2000 4000 8000

Slower - More Light - Blur Motion **Faster - Less Light - Freeze Motion**

Slow human action
or slow moving animals

SHUTTER SPEED

Bulb 30” 15” 8” 4” 2” 1” 2 4 8 15 30 60 **125** 250 500 1000 2000 4000 8000

Slower - More Light - Blur Motion **Faster - Less Light - Freeze Motion**

Minimum for portraits and panning vehicles

SHUTTER SPEED

Bulb 30” 15” 8” 4” 2” 1” 2 4 8 15 30 **60** 125 250 500 1000 2000 4000 8000

Slower - More Light - Blur Motion **Faster - Less Light - Freeze Motion**

Minimum to avoid hand-held camera shake

SHUTTER SPEED

Bulb 30” 15” 8” 4” **2”** **1”** 2 4 8 15 30 60 125 250 500 1000 2000 4000 8000

Slower - More Light - Blur Motion **Faster - Less Light - Freeze Motion**

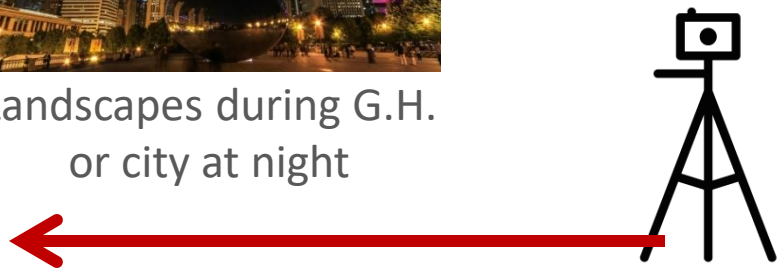
Milky water effect

SHUTTER SPEED

Bulb 30” 15” **8”** **4”** 2” 1” 2 4 8 15 30 60 125 250 500 1000 2000 4000 8000

Slower - More Light - Blur Motion **Faster - Less Light - Freeze Motion**

Landscapes during G.H.
or city at night

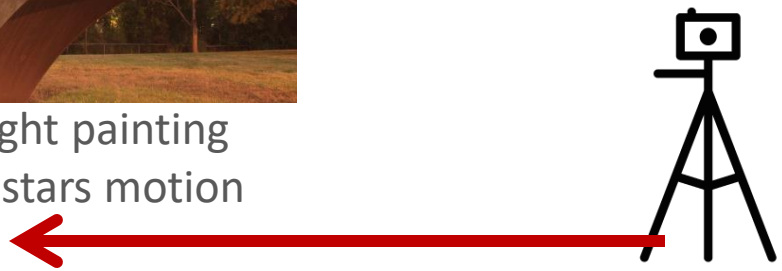


SHUTTER SPEED

Bulb 30” 15” 8” 4” 2” 1” 2 4 8 15 30 60 125 250 500 1000 2000 4000 8000

Slower - More Light - Blur Motion **Faster - Less Light - Freeze Motion**

Light painting
or stars motion



ASSIGNMENT #1

10 pictures in **Shutter Priority** mode
Outdoor with good light
ISO 400
Auto White Balance
JPEG (or RAW)
Hand-held: shutter 1/60 or above

Experiment with Shutter Speed to create motion blur and to freeze motion

Don't worry about corresponding aperture

Bring pictures to class on flash drive or camera digital memory card.

ASSIGNMENT #2

20-30 pictures in **Shutter Priority** mode
Outdoor with good light
ISO 400
Auto White Balance
JPEG (or RAW)
Hand-held: shutter 1/60 or above

Focus lock on subject and then recompose composition

Don't worry about corresponding aperture

Bring pictures to class on flash drive or camera digital memory card.

LENSES

VIDEO

LENSES

TYPES OF LENSES

Focal Lengths	Lens Type	Lens Usage
Less than 20mm	Ultra Wide Angle	Architecture
21mm - 35mm	Wide Angle	Landscape
35mm - 70mm	Normal	Street and Documentary
80mm - 135mm	Medium Telephoto	Portraiture
135mm - 300mm	Telephoto	Sports and Wildlife
More than 300mm	Super Telephoto	Wildlife

Specialty Lenses
- Fisheye
- Macro

MAJOR TYPES OF LENSES

Wide Angle

Normal/Standard

Telephoto

Zoom or Prime/Fixed

LENSES MARKINGS

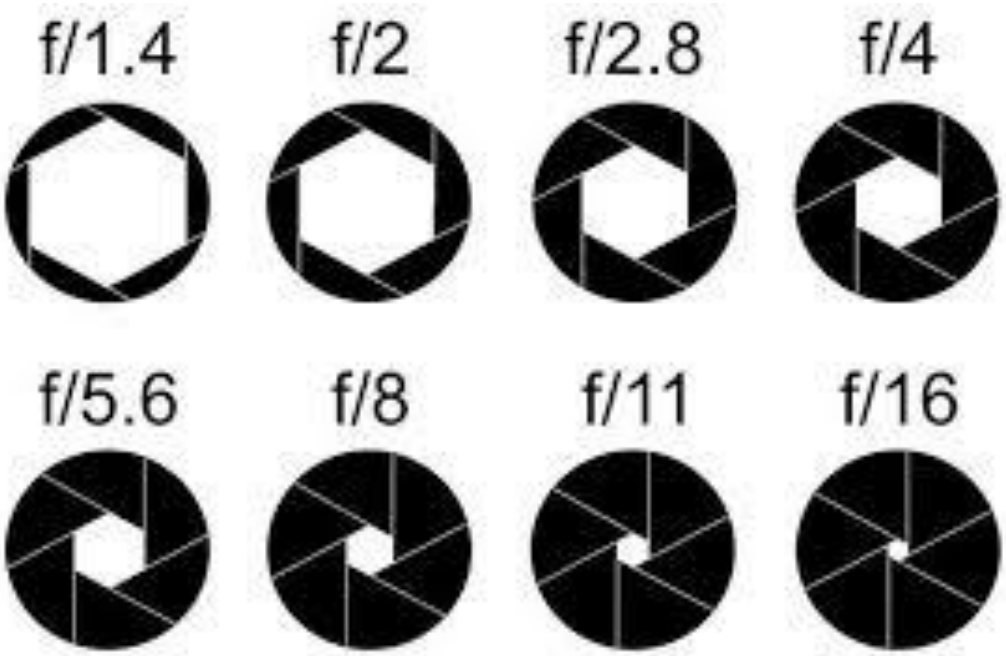
CANON ZOOM LENS EF 28-80mm 1:3.5-5.6 58mm

CANON EF LENS 50mm 1:1.8 49mm

APERTURE

Aperture = the size of opening in the lens through which light travels and measure in ***F-stop*** values

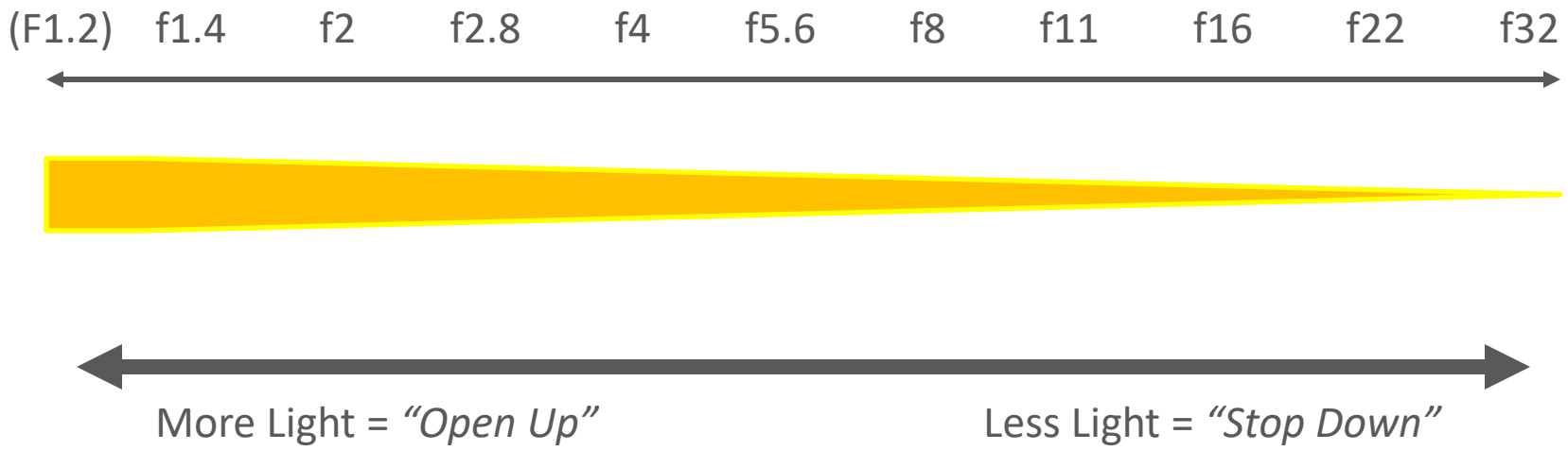
APERTURE/F-STOPS



APERTURE/F-STOPS

Maximum Aperture, or f-stop = the lens speed

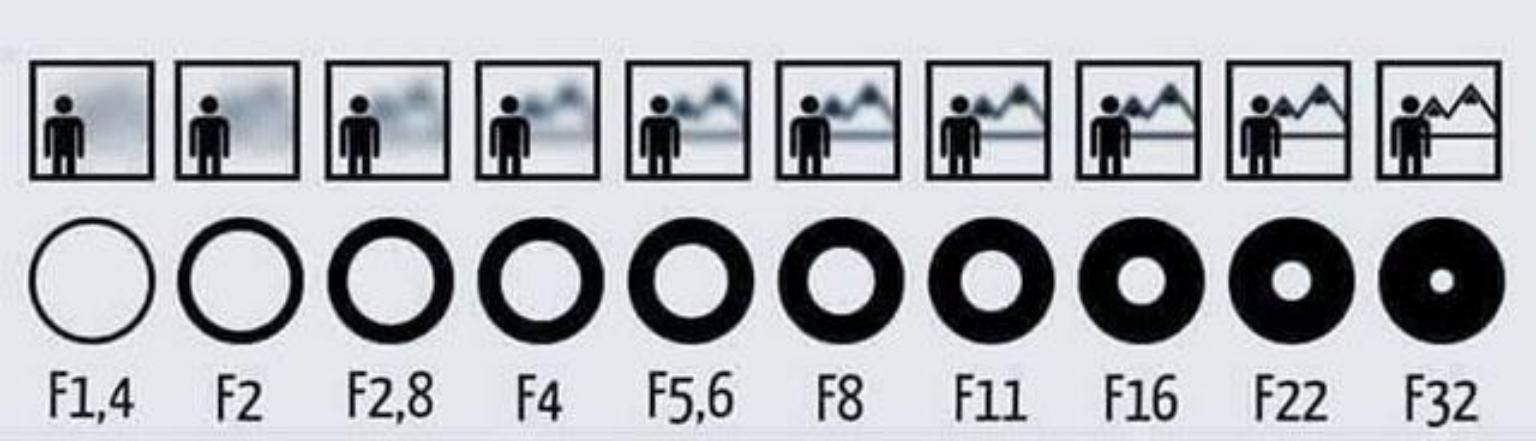
APERTURE/F-STOPS

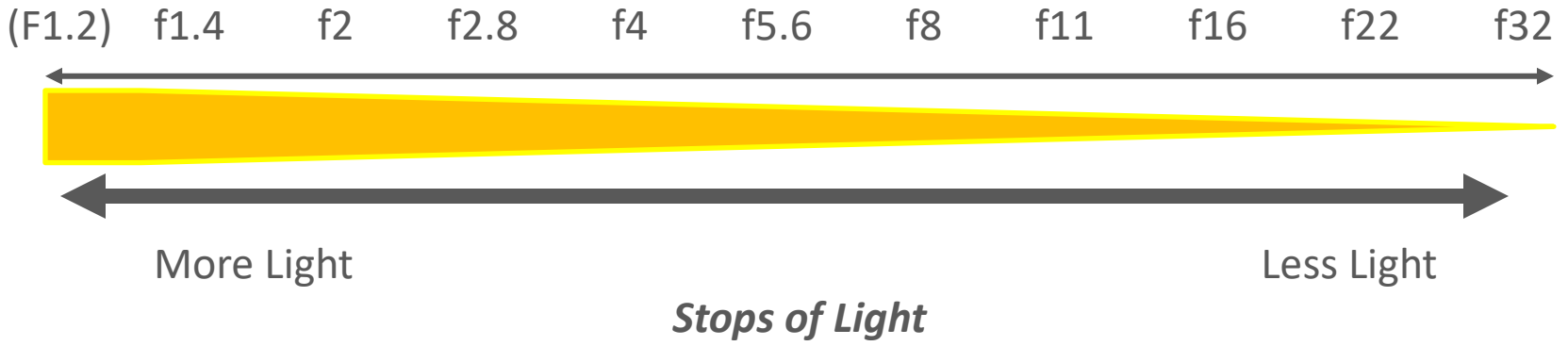


Stops of Light

Each full stop = halving or doubling of light

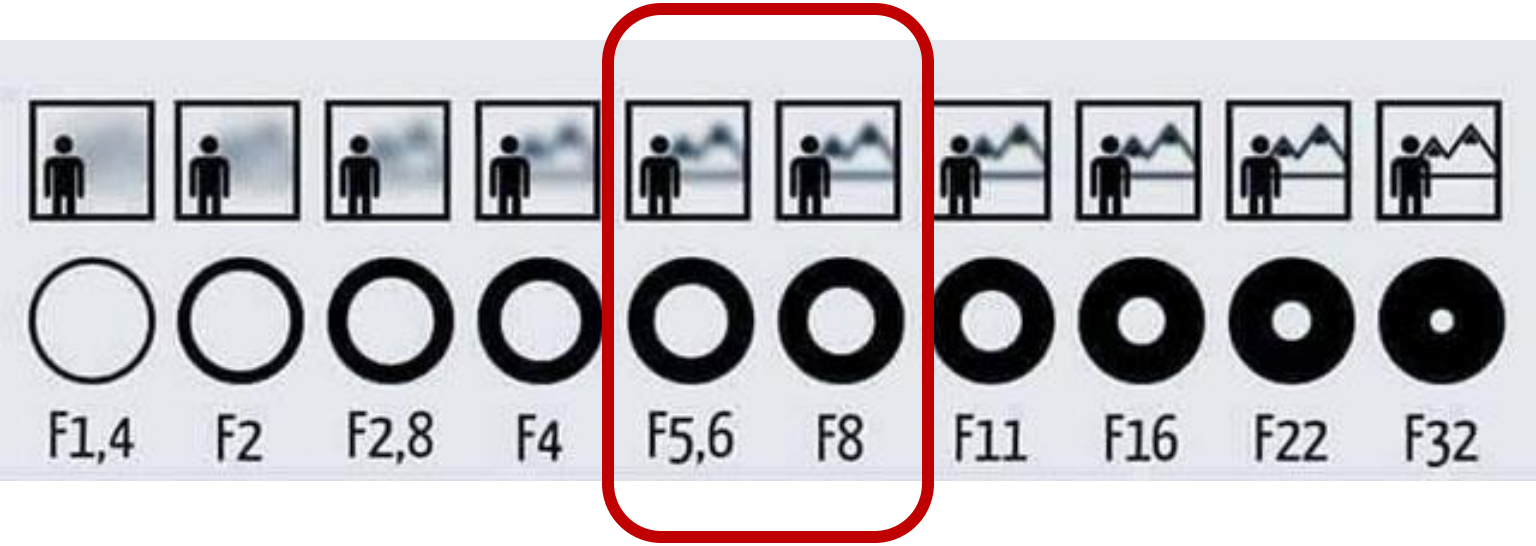
APERTURE & DEPTH OF FIELD





Stops of Light

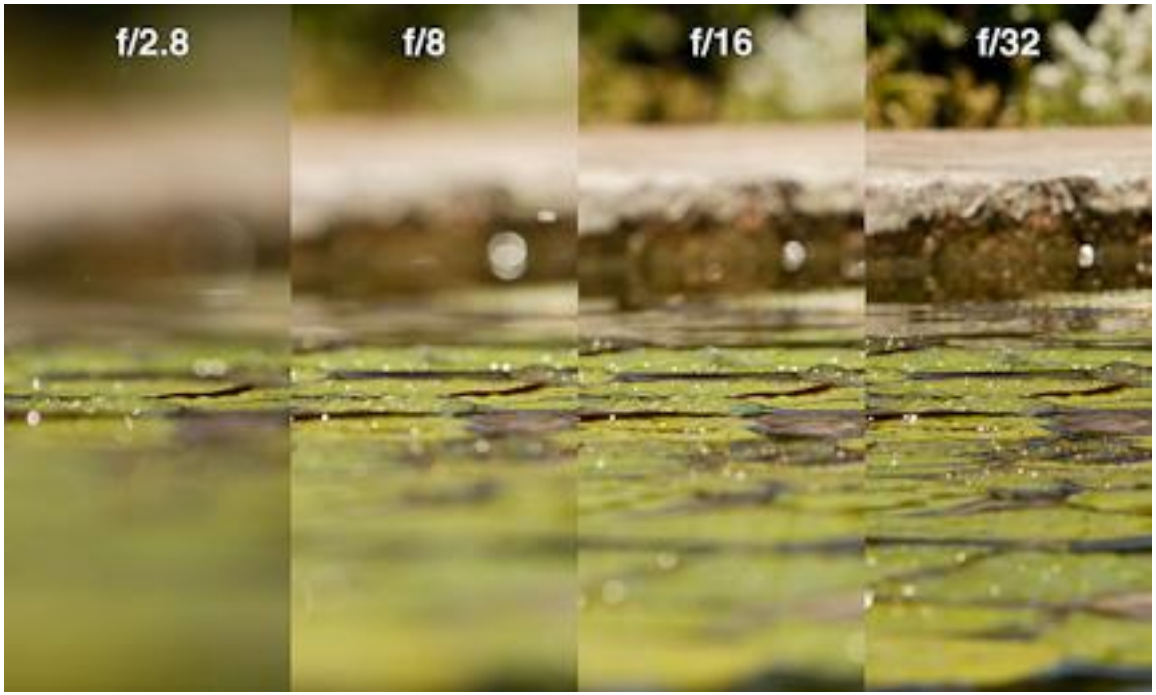
APERTURE & DEPTH OF FIELD



Tip: middle range (5.6 or 8.0) of lens tends to be the sweet spot and sharpest

APERTURE & DEPTH OF FIELD

APERTURE & DEPTH OF FIELD



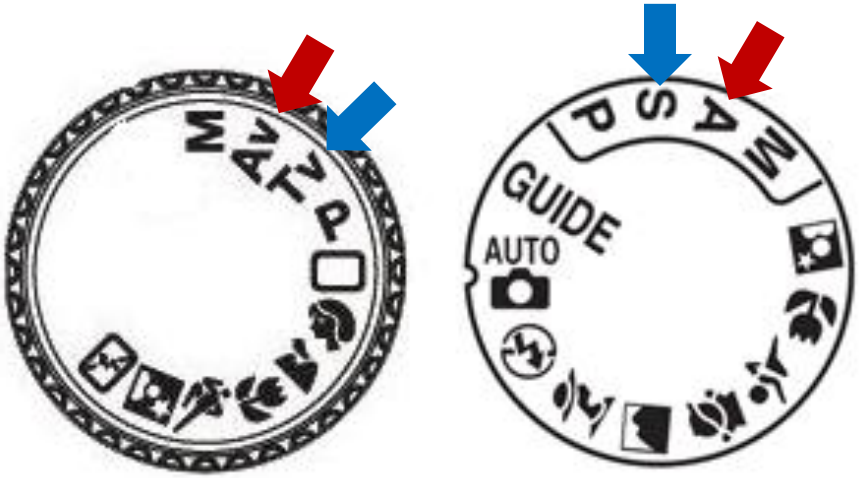
“Open Up” = Shallow Depth of Field

“Stop Down” = Maximum Depth of Field

APERTURE & DEPTH OF FIELD

IMPORTANT CAMERA SET-UP

Mode Dial



CANON NIKON

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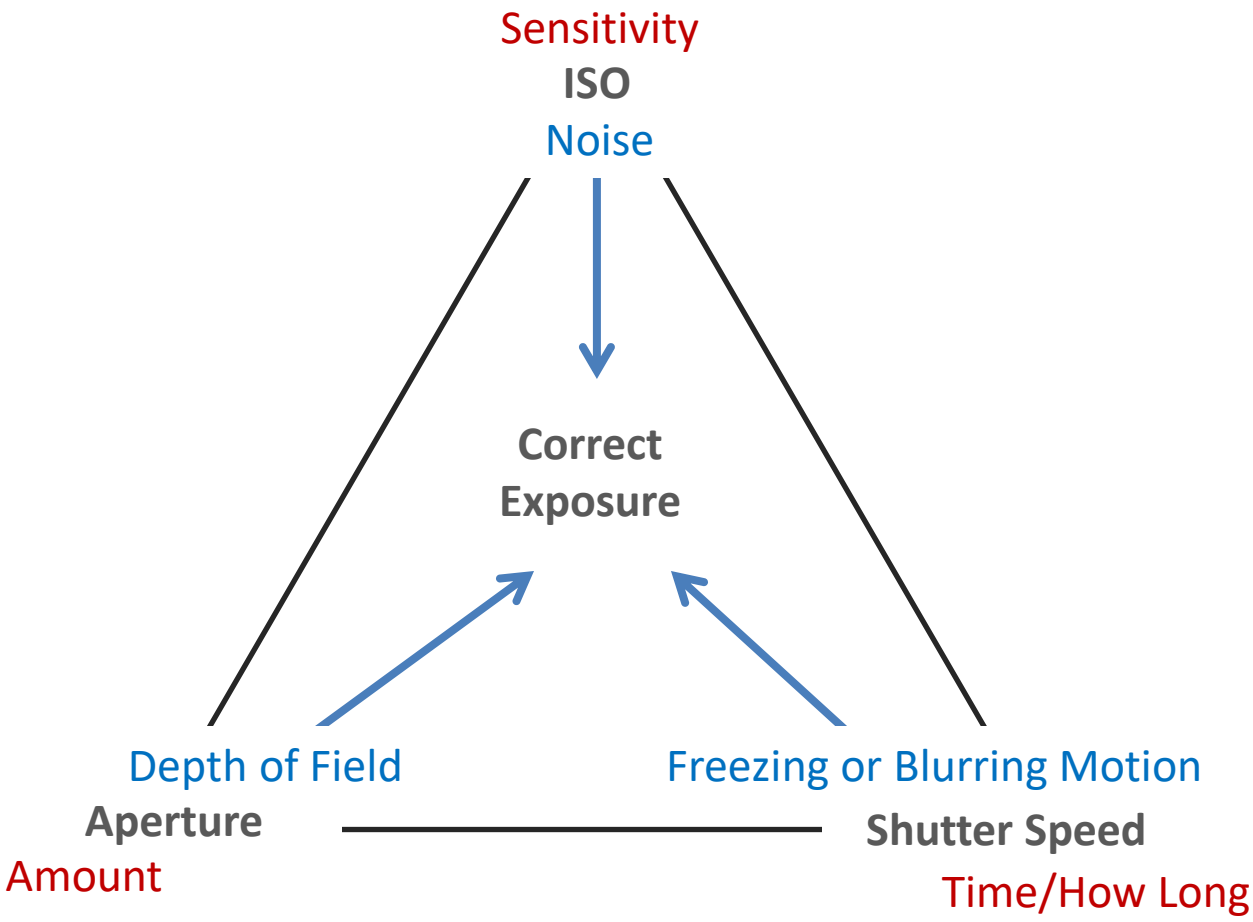
THE EXPOSURE TRIANGLE



ASSIGNMENT

20-30 pictures in Aperture Priority
Outdoor
ISO 400
Auto White Balance
JPEG (or RAW)
Hand-held: shutter 1/60 or above

1) Creative focusing/focus locking/recomposing.
2) Change depth of field (f-stop) to highlight subject and create shallow depth of field and background blur
3) or to increase depth of field and background sharpness.

Bring pictures to class on flash drive or camera digital memory card.

SHUTTER SPEED & APERTURE

Bulb 30” 15” 8” 4” 2” 1” 2 4 8 15 30 60 125 250 500 1000 2000 4000 8000

More Light = Slower
Blur Motion/Light Painting

Less Light = Faster
Freeze Motion

(F1.2) f1.4 f2 f2.8 f4 f5.6 f8 f11 f16 f22 f32

More Light = *“Open Up”* = Larger Hole
Shallow Depth of Field

Less Light = *“Stop Down”* = Smaller Hole
Deep Depth of Field

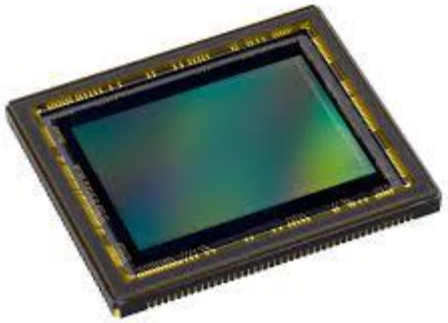
More Light

Less Light

Stops of Light

Each full stop = halving or doubling of light

ISO & THE IMAGE SENSOR



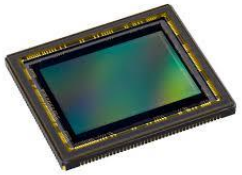
100 200 400 800 1600 3200 6400 12800 25600

Less Light More Light

Stops of Light

Each full stop = halving or doubling of light

ISO & THE IMAGE SENSOR



100 200 400 800 1600 3200 6400 12800 25600

Less Light

More Light

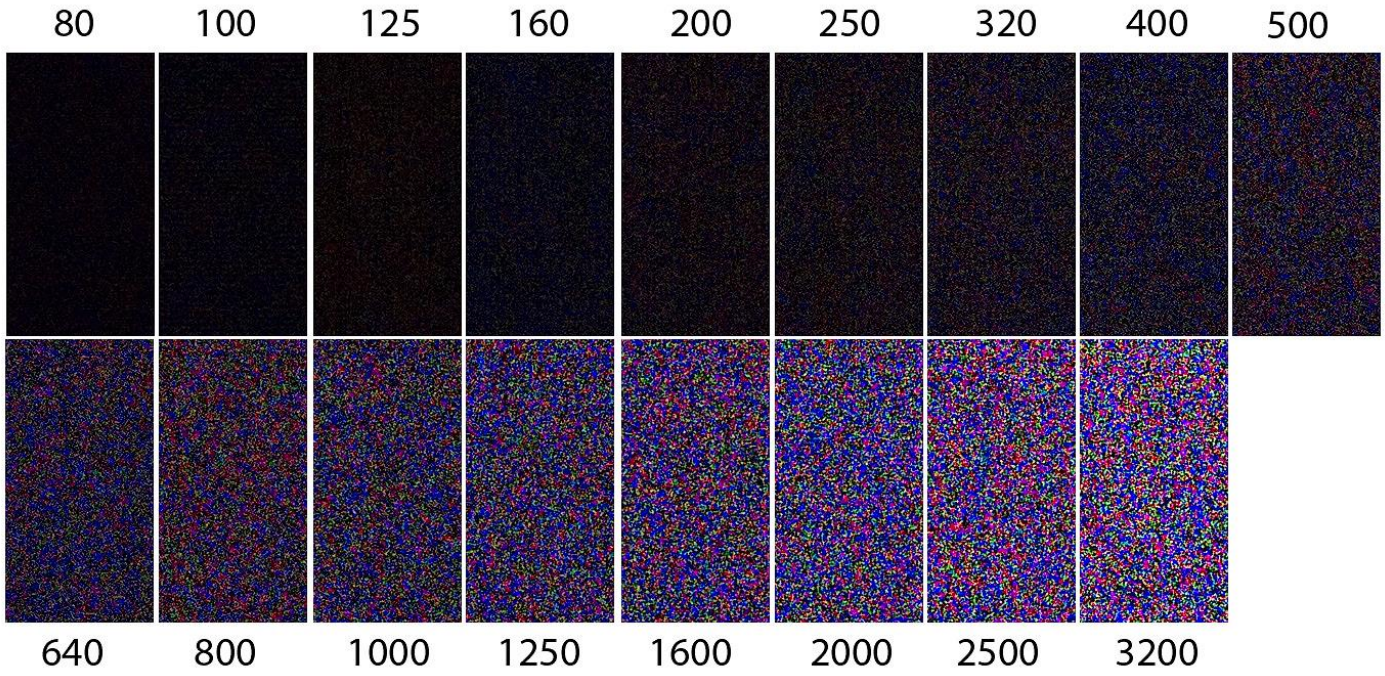
Less Noise & Higher Quality

Ideal

More Noise & Less Quality

Trade Off to get other needed shutter or F-Stop Settings

ISO & THE IMAGE SENSOR



SHUTTER SPEED, APERTURE & ISO

Equivalent Exposures

Bulb 30” 15” 8” 4” 2” 1” 2 4 8 15 30 60 125 250 500 1000 2000 4000 8000

More Light = Slower

Blur Motion

Less Light = Faster

Freeze Motion

f1.4 f2 f2.8 f4 f5.6 f8 f11 f16 f22 f32

More Light = *“Open Up” = Larger Hole*

Shallow Depth of Field

Less Light = *“Stop Down” = Smaller Hole*

Deep Depth of Field

100 200 400 800 1600 3200 6400

Less Light

Less Noise & Higher Quality

More Light

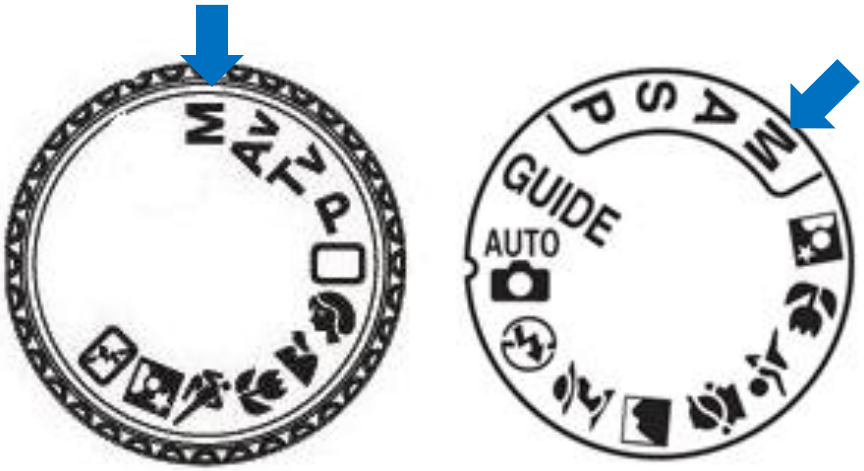
More Noise & Lower Quality

EXPOSURE COMPENSATION

ISO & THE IMAGE SENSOR

Is *auto* ISO Good or Bad?

Mode Dial



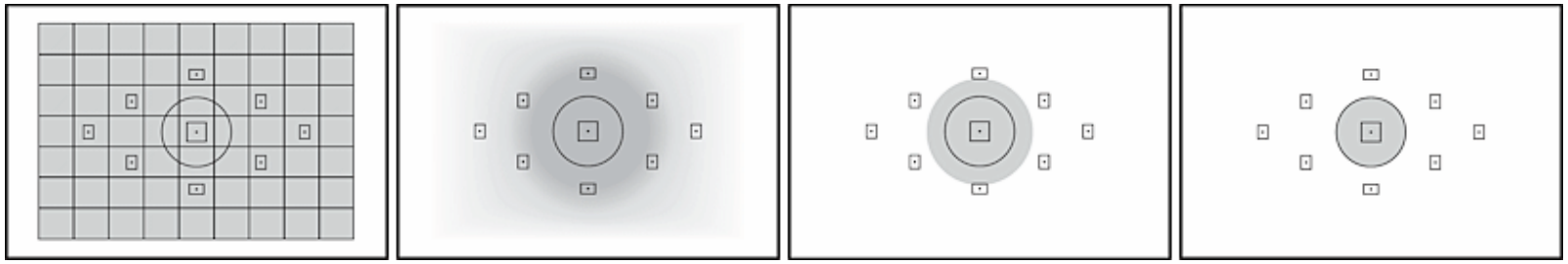
CANON NIKON

M = Fully Manual

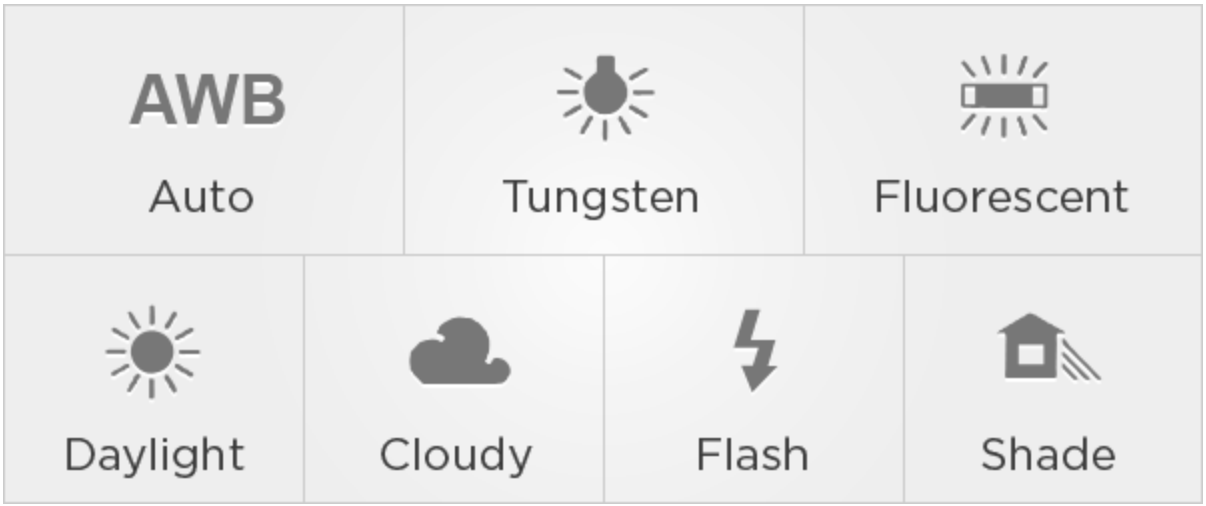
FULLY MANUAL MODE

METERING PATTERNS

Multi-Area/Evaluated/Matrix
Center-Weighted Average
Partial Metering (Canon)
Spot



WHITE BALANCE



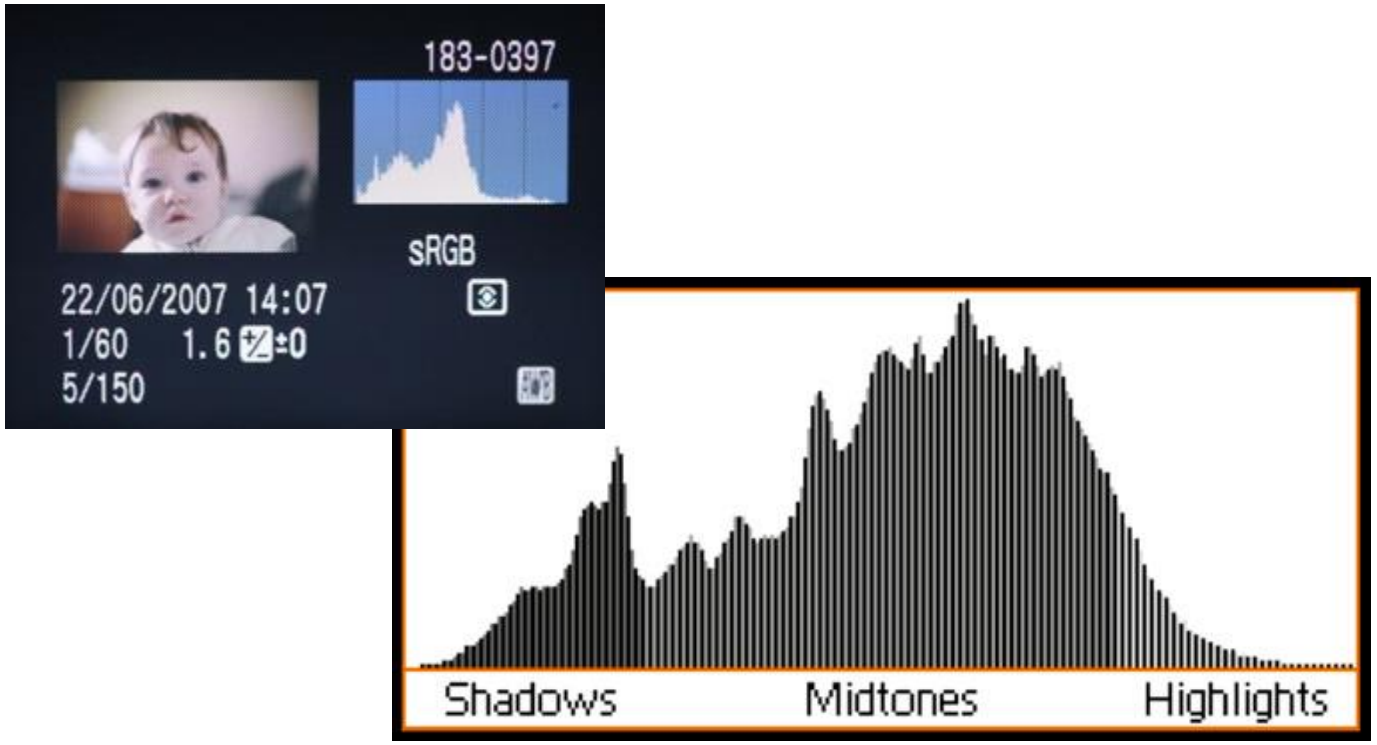
WB SETTINGS	COLOR TEMPERATURE	LIGHT SOURCES
	10000 - 15000 K	Clear Blue Sky
	6500 - 8000 K	Cloudy Sky / Shade
	6000 - 7000 K	Noon Sunlight
	5500 - 6500 K	Average Daylight
	5000 - 5500 K	Electronic Flash
	4000 - 5000 K	Fluorescent Light
	3000 - 4000 K	Early AM / Late PM
	2500 - 3000 K	Domestic Lightning
	1000 - 2000 K	Candle Flame

WHITE BALANCE

Example Shot Under Fluorescent Lights

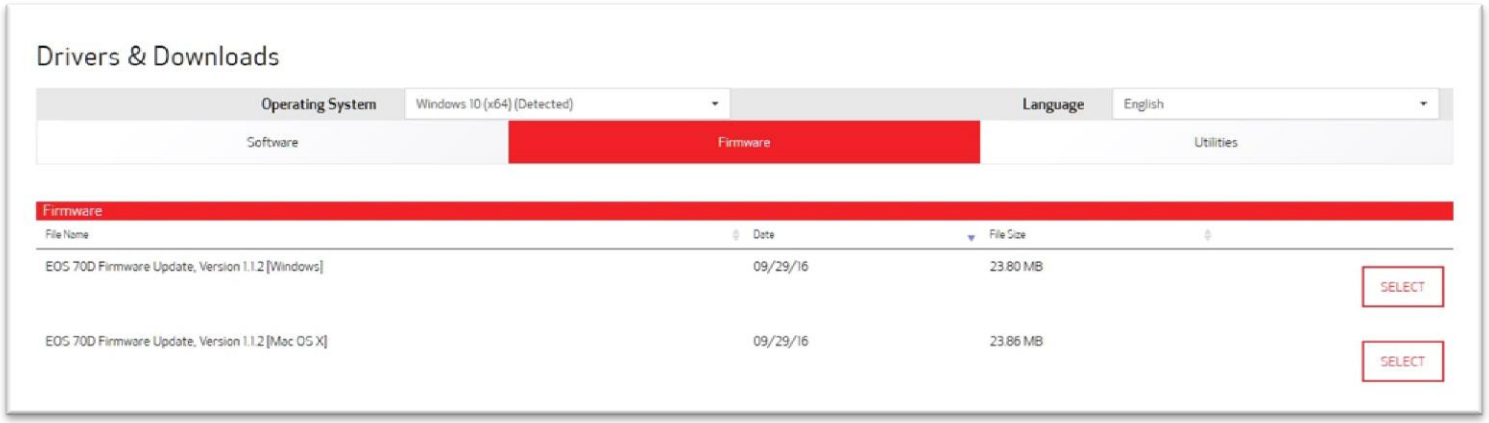
Auto | Cloudy | Daytime | Fluorescent | Shade | Tungsten

HISTOGRAM


183-0397
sRGB
22/06/2007 14:07
1/60 1.6 ±0
5/150
Shadows
Midtones
Highlights

CLEANING

FIRMWARE UPDATES



FULLY MANUAL MODE

ESSENTIAL PHOTOGRAPHY TIPS

JPEG vs. RAW

- RAW is not an image file per se (it will require special software to view, though this software is easy to get)
- JPEG is processed in camera and ready to go and easy to share immediately
- RAW is the highest level of quality with 4K – 16K levels of brightness, higher dynamic range and more control of exposure, blacks, whites, recovery, contrast, brightness, whites etc.)
- JPEG records 256 levels of brightness.
- RAW you can do extremely refined processing of image
- JPEG camera does processing and dumps a tone of information do=so any future processing is more limited
- RAW is uncompressed “lossless” data
- JPEG is lossy, compressed image
- RAW is not suitable for printing directly from the camera or without post processing.
  - read only (all changes are saved in an XMP “sidecar” file and/or to a JPEG, TIFF or other image format).
  - sometimes admissible in a court as evidence (as opposed to a changeable image format).
  - waiting to be processed by your computer
- JPEG is nicely processed, good looking and ready to share and print (the camera has several JPEG settings, usually referred to as Picture Style)
- RAW much better detail and non-destructive editing (uses a “sidecar” file)
- RAW much bigger file sizes
- RAW much better for making TIFF or JPEG files for digital prints because of tonal range, and colors range.
- RAW easy to adjust White after the fact

ADDITIONAL ACCESSORIES

Tripod with Ball Head Mount

Grey card

Lens Hood

UV Filter Lens Protector

35mm or 50mm F1.8/F1.4 Lens

Extra Battery

ADDITIONAL ACCESSORIES

UV Lens Filter/Protector

IDEAS ON COMPOSITION

Consider Black & White to Emphasize Compositional Relationships and Contrasts

IDEAS ON COMPOSITION

Learn to See in Black & White!

IDEAS ON COMPOSITION

The “Rule of Thirds”

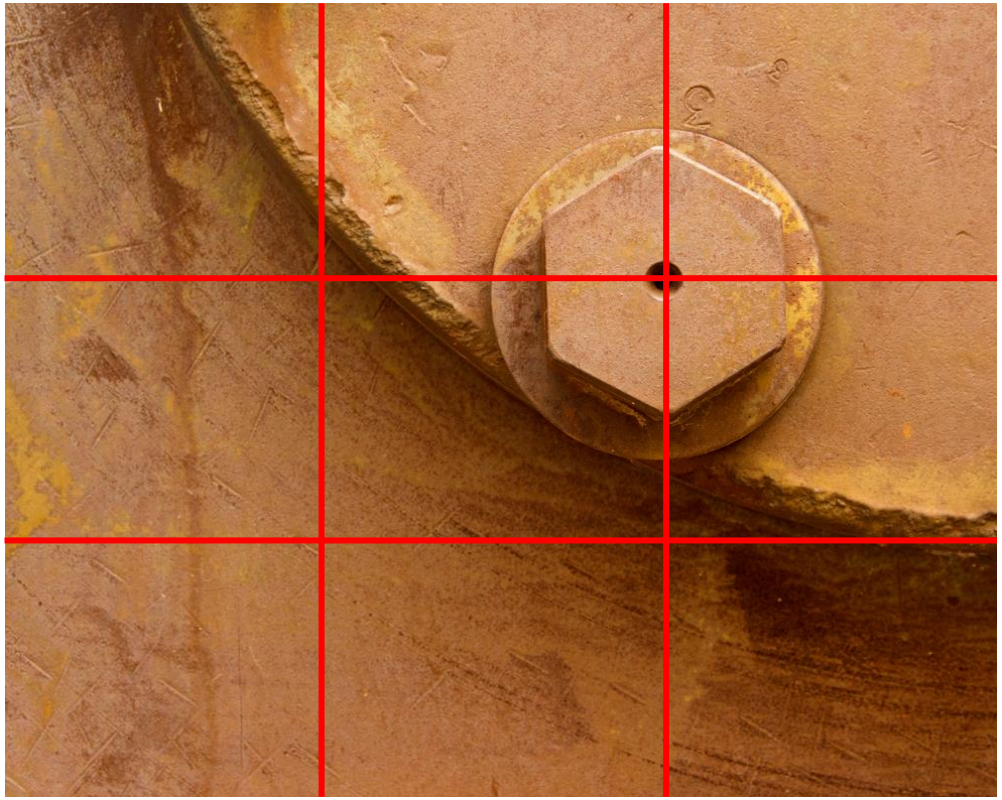
While framing/composing your shot think of the four intersecting horizontal and vertical lines. Divide your composition using them and place your subject on one of lines, using the power points when appropriate. This is not a hard rule, but a good guideline to follow to get your subject out of center for more interesting and dramatic look.

IDEAS ON COMPOSITION

The “Rule of Thirds”

IDEAS ON COMPOSITION

The “Rule of Thirds”

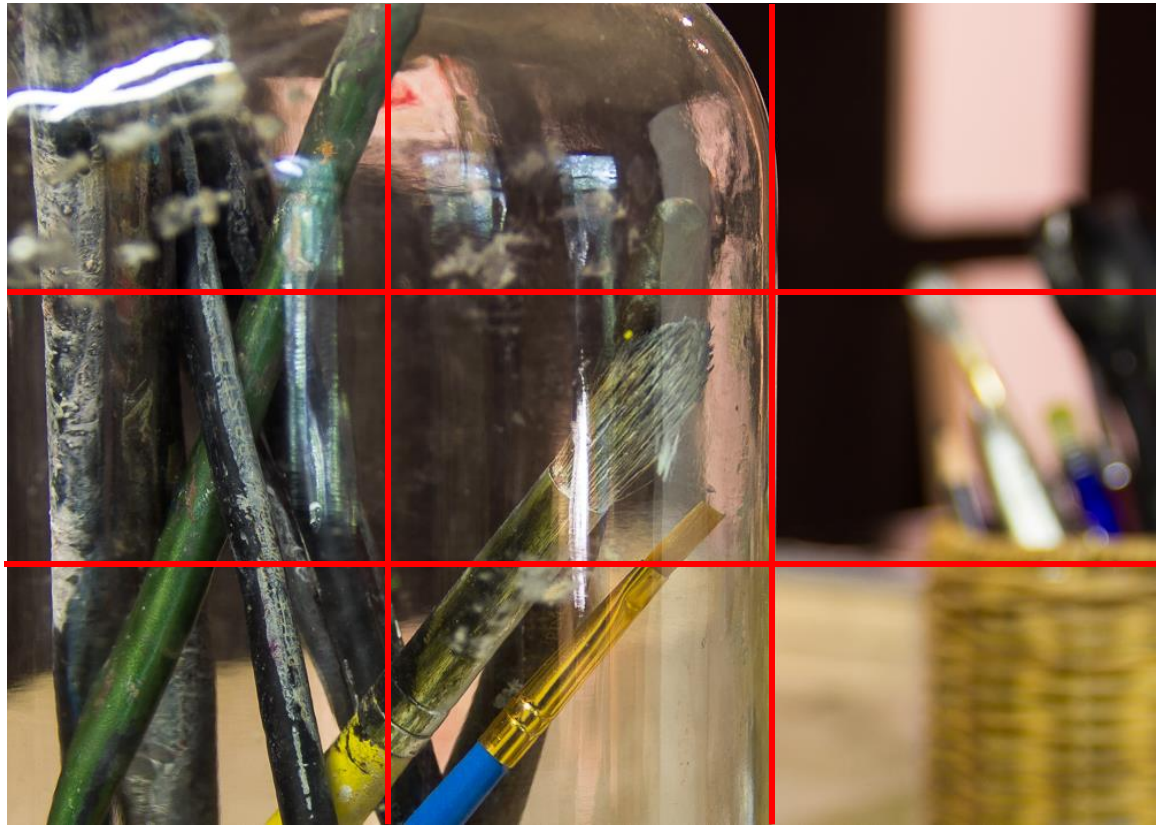


IDEAS ON COMPOSITION

The “Rule of Thirds”

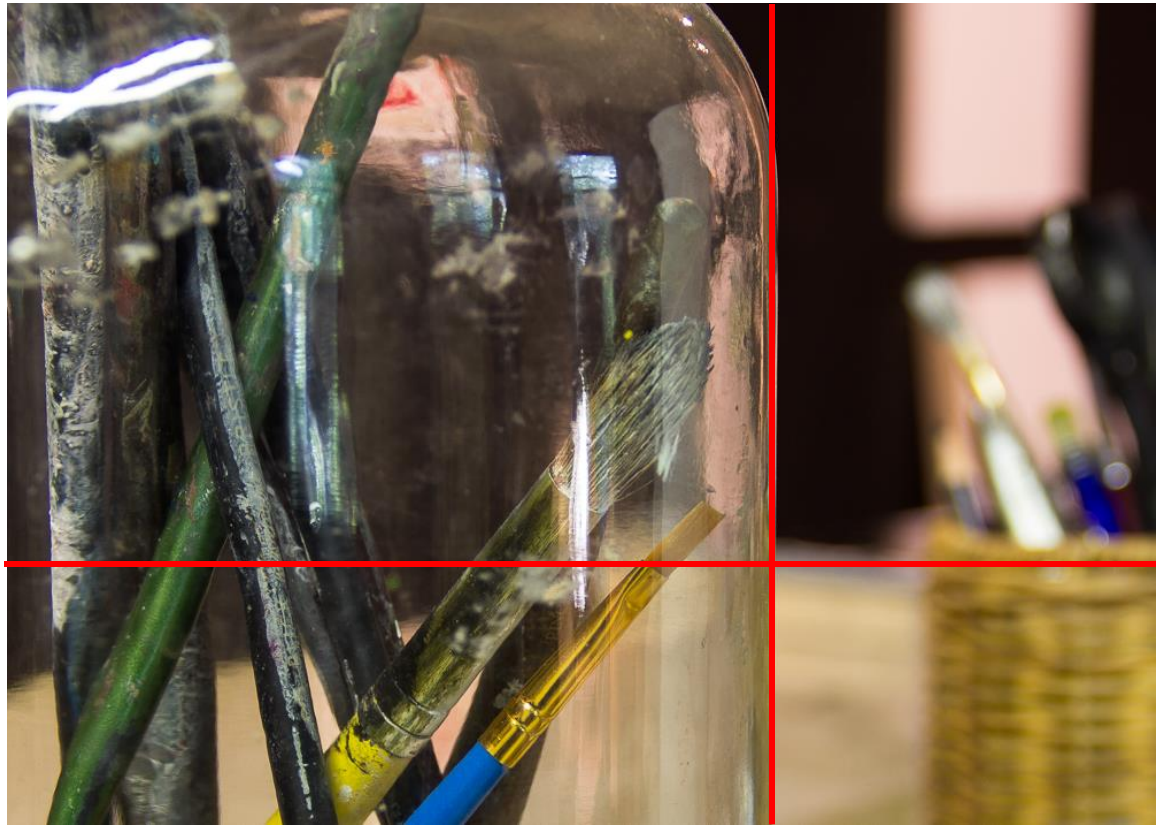
IDEAS ON COMPOSITION

The “Rule of Thirds”



IDEAS ON COMPOSITION

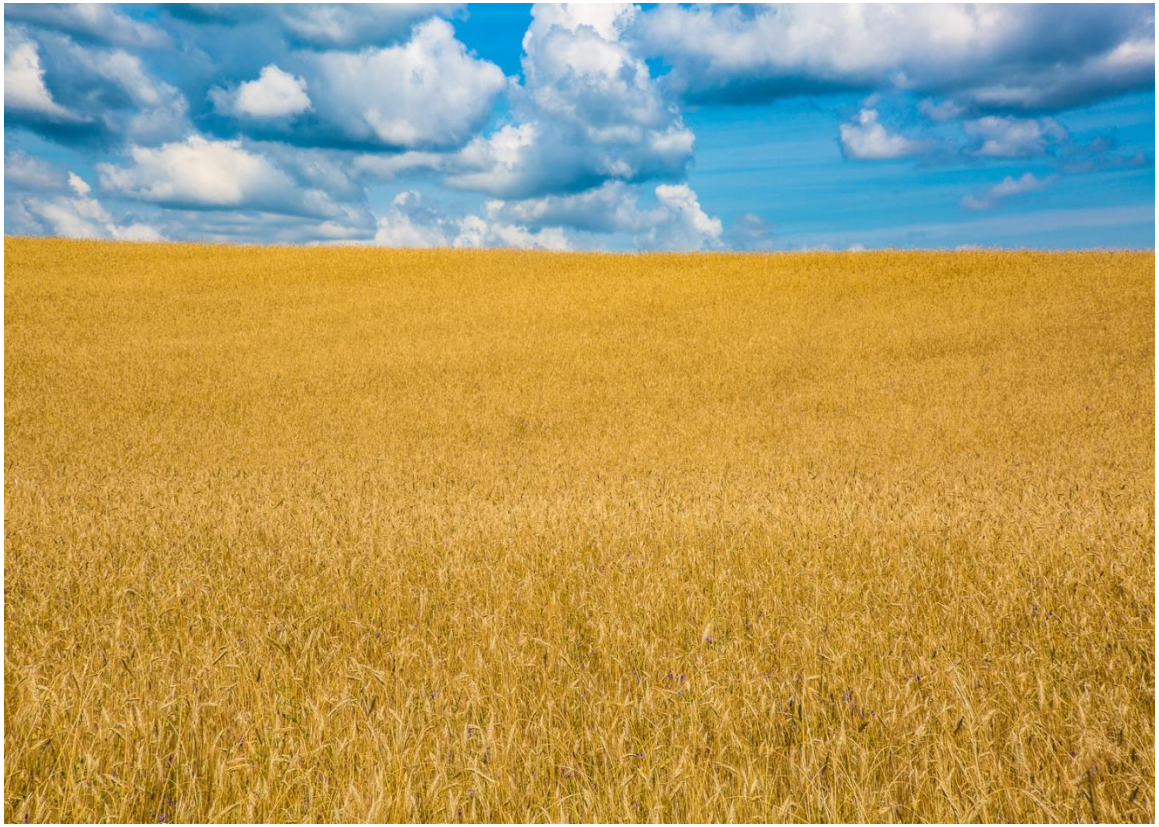
The “Rule of Thirds”



IDEAS ON COMPOSITION

The “Rule of Thirds”

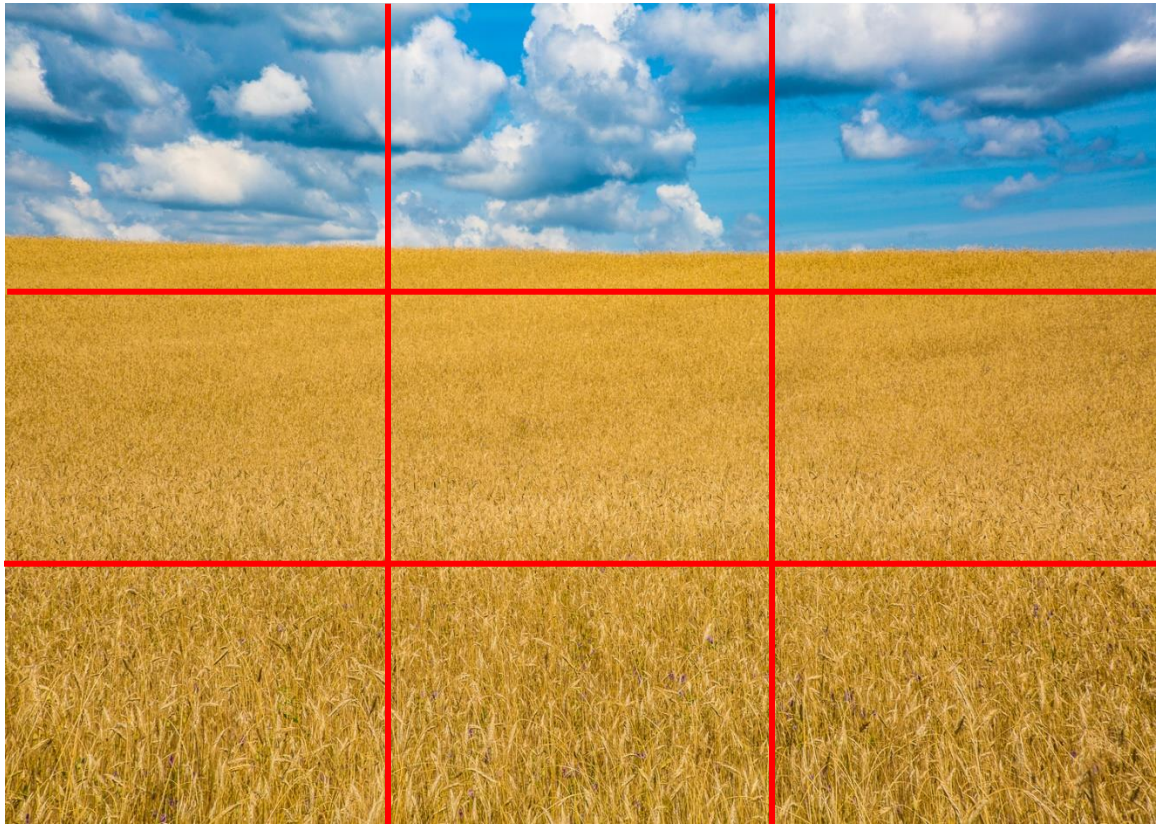
IT DOESN’T HAVE TO BE A PERFECT ALIGNMENT TO WORK



IDEAS ON COMPOSITION

The “Rule of Thirds”

IT DOESN’T HAVE TO BE A PERFECT ALIGNMENT TO WORK

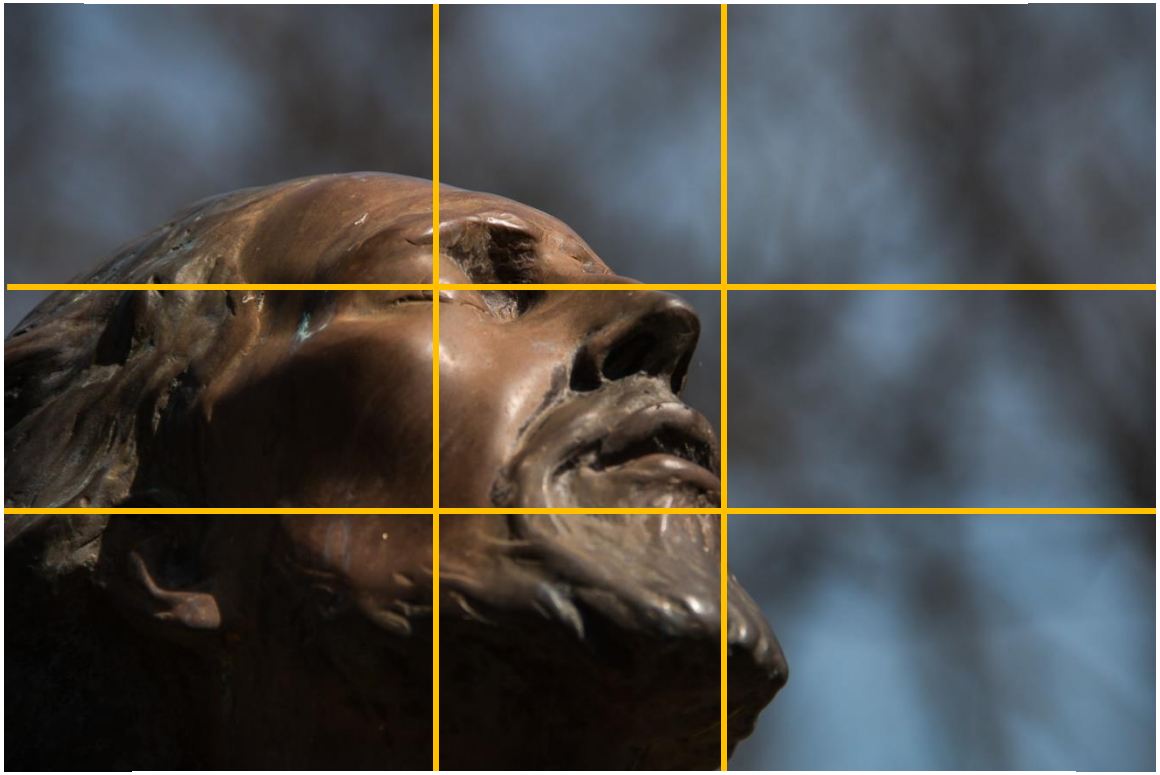


IDEAS ON COMPOSITION

The “Rule of Thirds” variation
The “Golden Ratio”

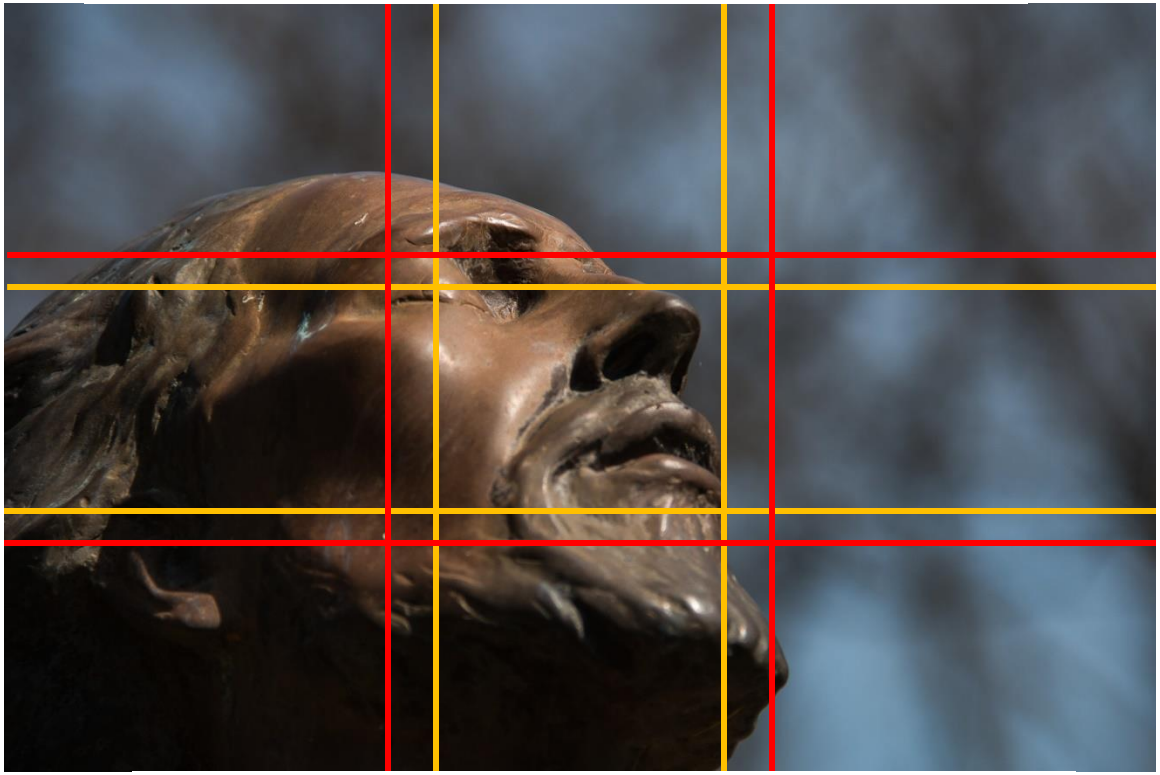
IDEAS ON COMPOSITION

The “Rule of Thirds” variation
The “Golden Ratio”



IDEAS ON COMPOSITION

The “Rule of Thirds” variation
The “Golden Ratio”



IDEAS ON COMPOSITION

Fill the Frame

When appropriate, don’t leave too much space around your main subject. This deemphasizes the importance of your subject. Move in, or zoom in, closer.

IDEAS ON COMPOSITION

Fill the Frame

IDEAS ON COMPOSITION

Fill the Frame

IDEAS ON COMPOSITION

Make Use of “Leading Lines”

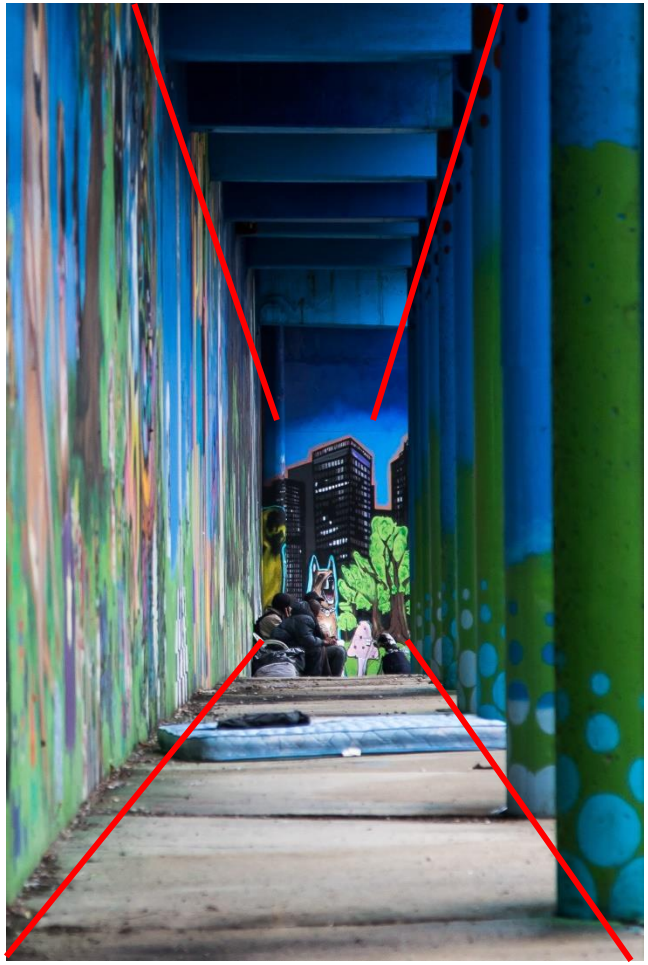
Lines in a scene can help control where the viewers eyes moves and lead them into the subject.

IDEAS ON COMPOSITION

Make Use of “Leading Lines”

IDEAS ON COMPOSITION

Make Use of “Leading Lines”



IDEAS ON COMPOSITION

Bad Lines and Distractions

Pay attention to the background and avoid bad lines that cut through the subject in an awkward way, or otherwise distract from the subject. Also, watch for distractions, or “eyes snags,” around the subject and edges of the composition.

IDEAS ON COMPOSITION

Bad Lines and Distractions

taken from Google images

IDEAS ON COMPOSITION

Change Your Perspective

Don’t just shoot from eyes level. Experiment with different heights, angles and perspectives.

IDEAS ON COMPOSITION

Change Your Perspective

Wide Aperture

Use a wide aperture to make the subject pop.
Open up the aperture, to blur background and/or foreground.
Keep the main subject in *“tack sharp”* focus.

IDEAS ON COMPOSITION

Wide Aperture + Macro Telephoto Lens

IDEAS ON COMPOSITION

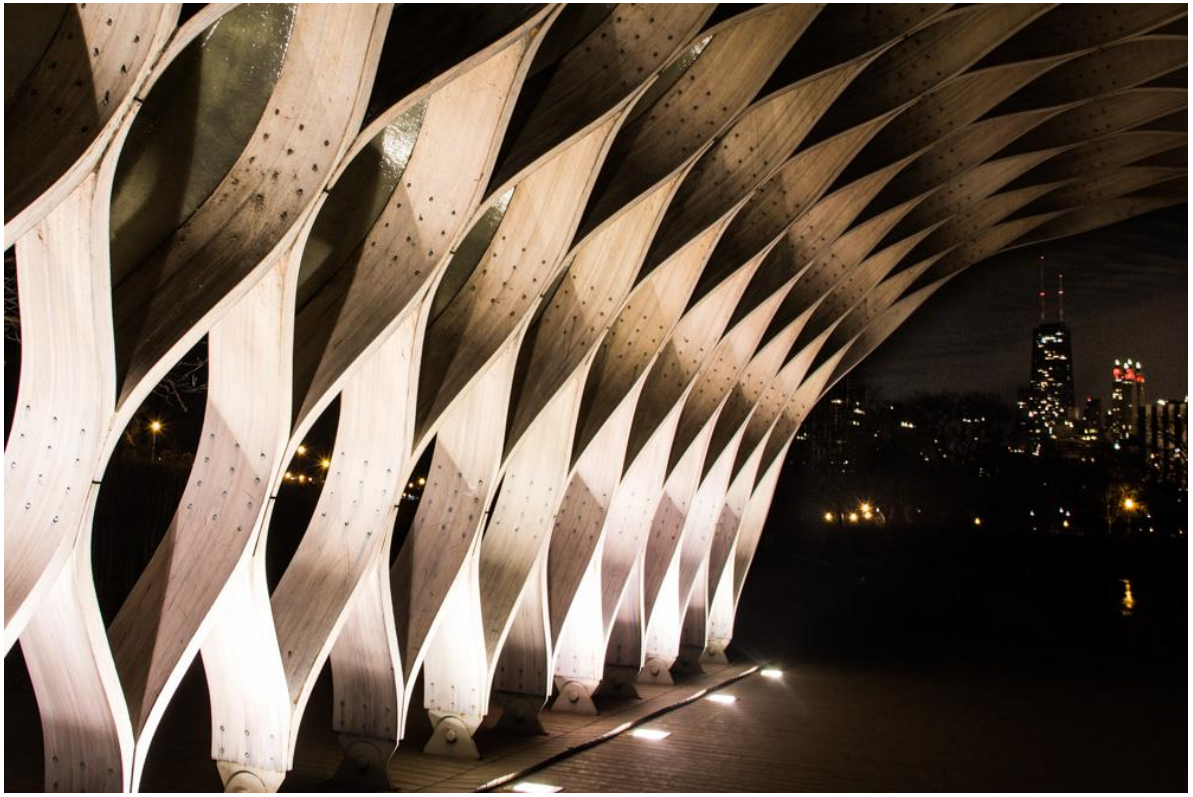
Fill the Frame + Wide Aperture + Telephoto Lens

IDEAS ON COMPOSITION

Framing

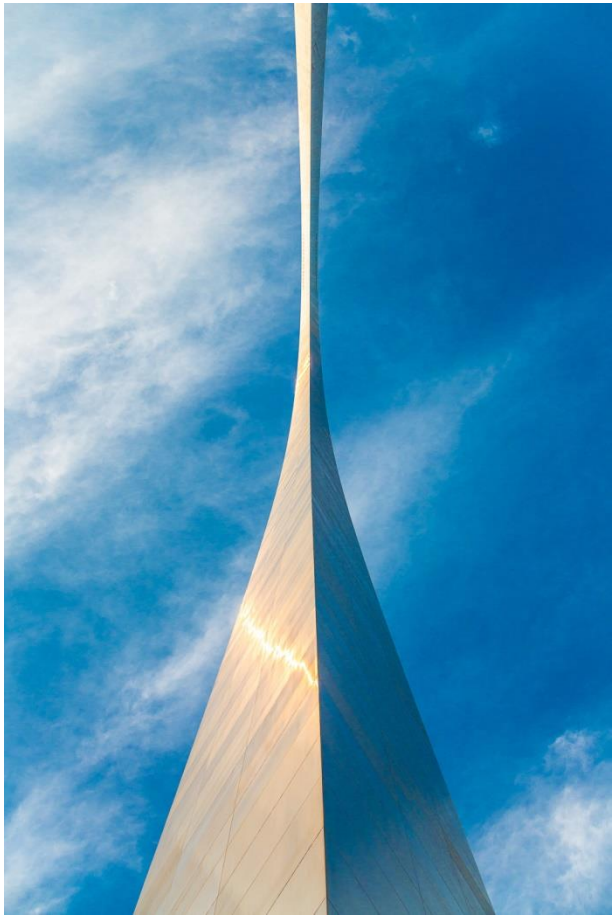
IDEAS ON COMPOSITION

Framing + Rule of Thirds



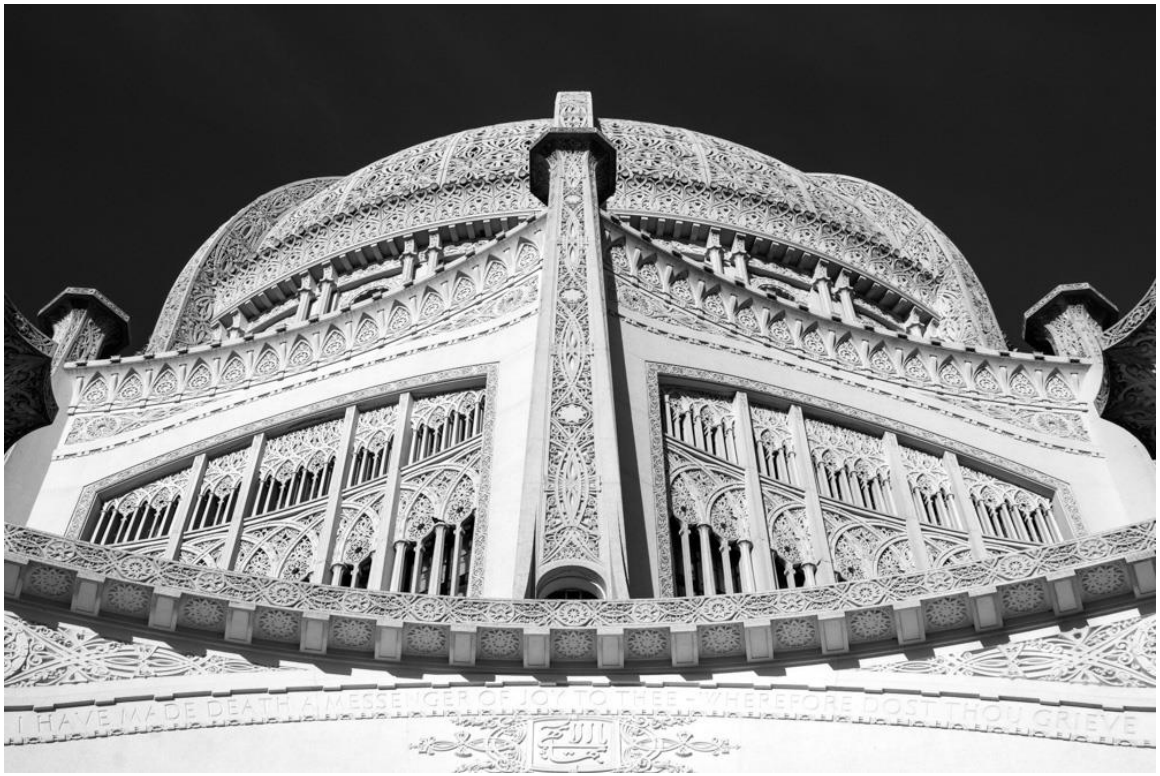
IDEAS ON COMPOSITION

Symmetry



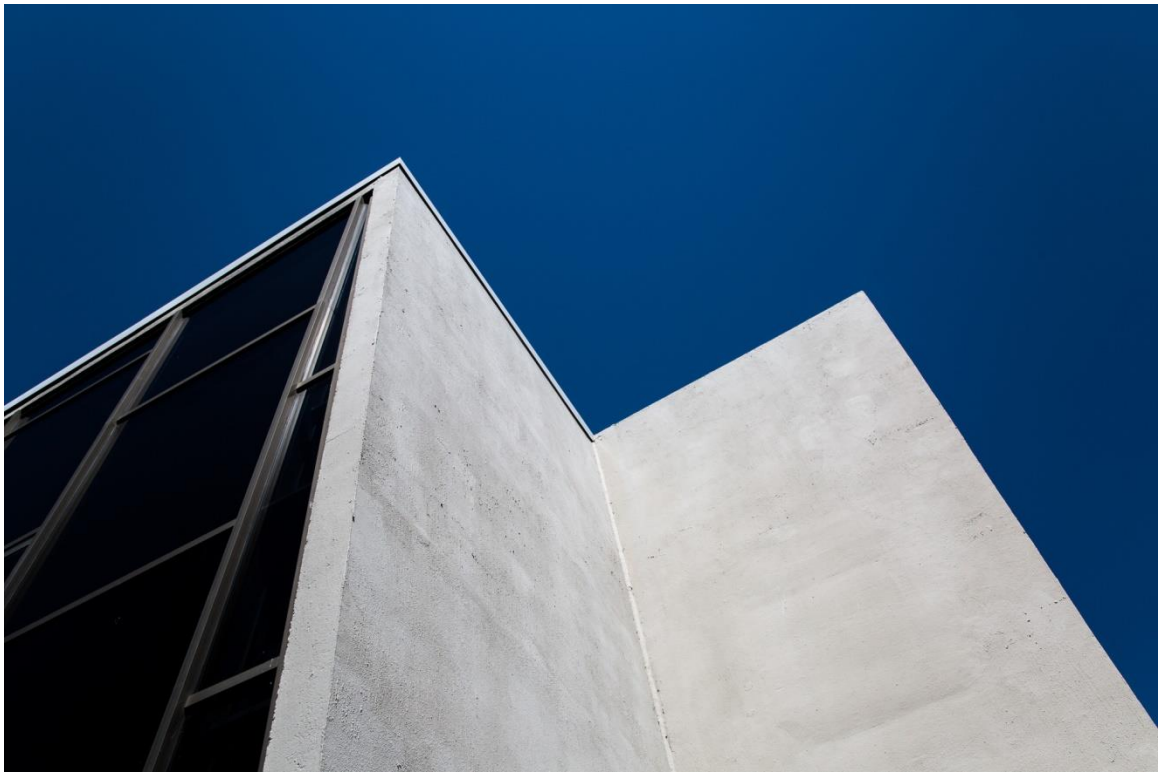
IDEAS ON COMPOSITION

Symmetry + Black & White



IDEAS ON COMPOSITION

Diagonals



IDEAS ON COMPOSITION

Converging Lines
(with Symmetry + Black & White)

IDEAS ON COMPOSITION

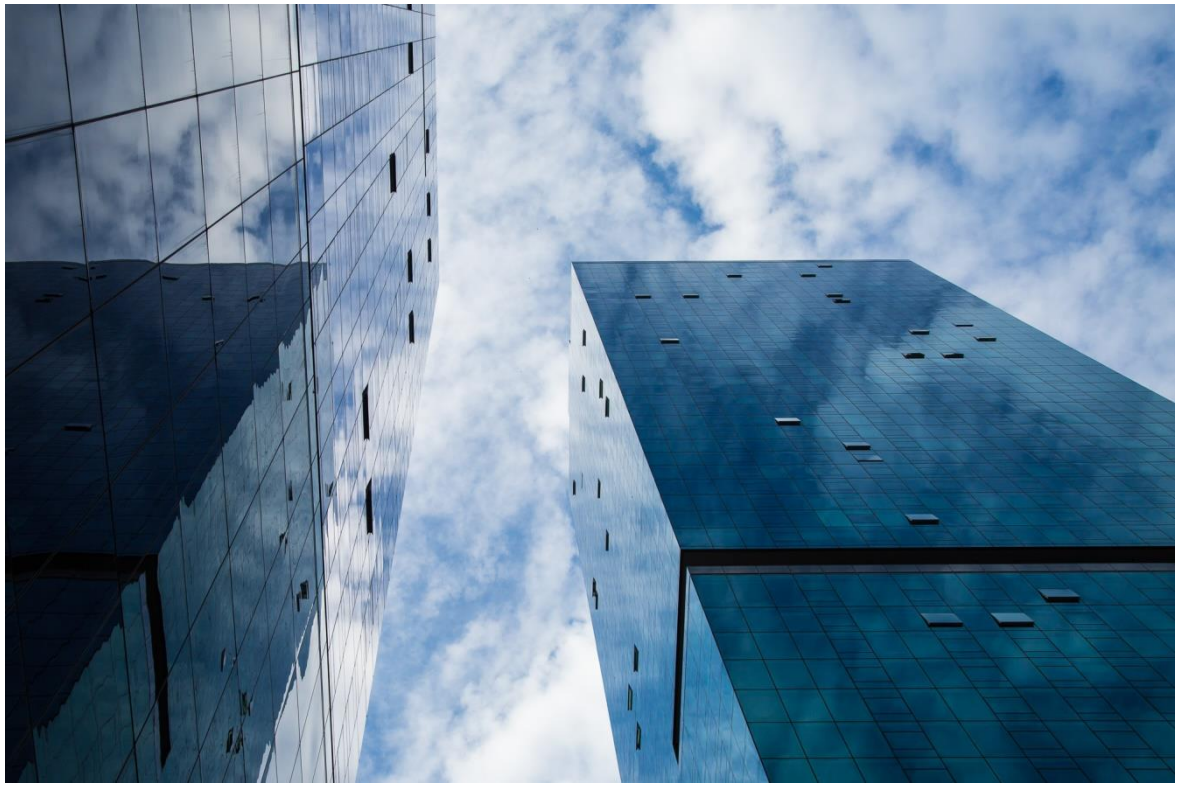
Repetition and Pattern

IDEAS ON COMPOSITION

Repetition, Pattern & Texture

IDEAS ON COMPOSITION

Reflections and Shadows



IDEAS ON COMPOSITION

Motion Blur to Create Original Compositional Element

IDEAS ON COMPOSITION

Change Format/Image Ratio

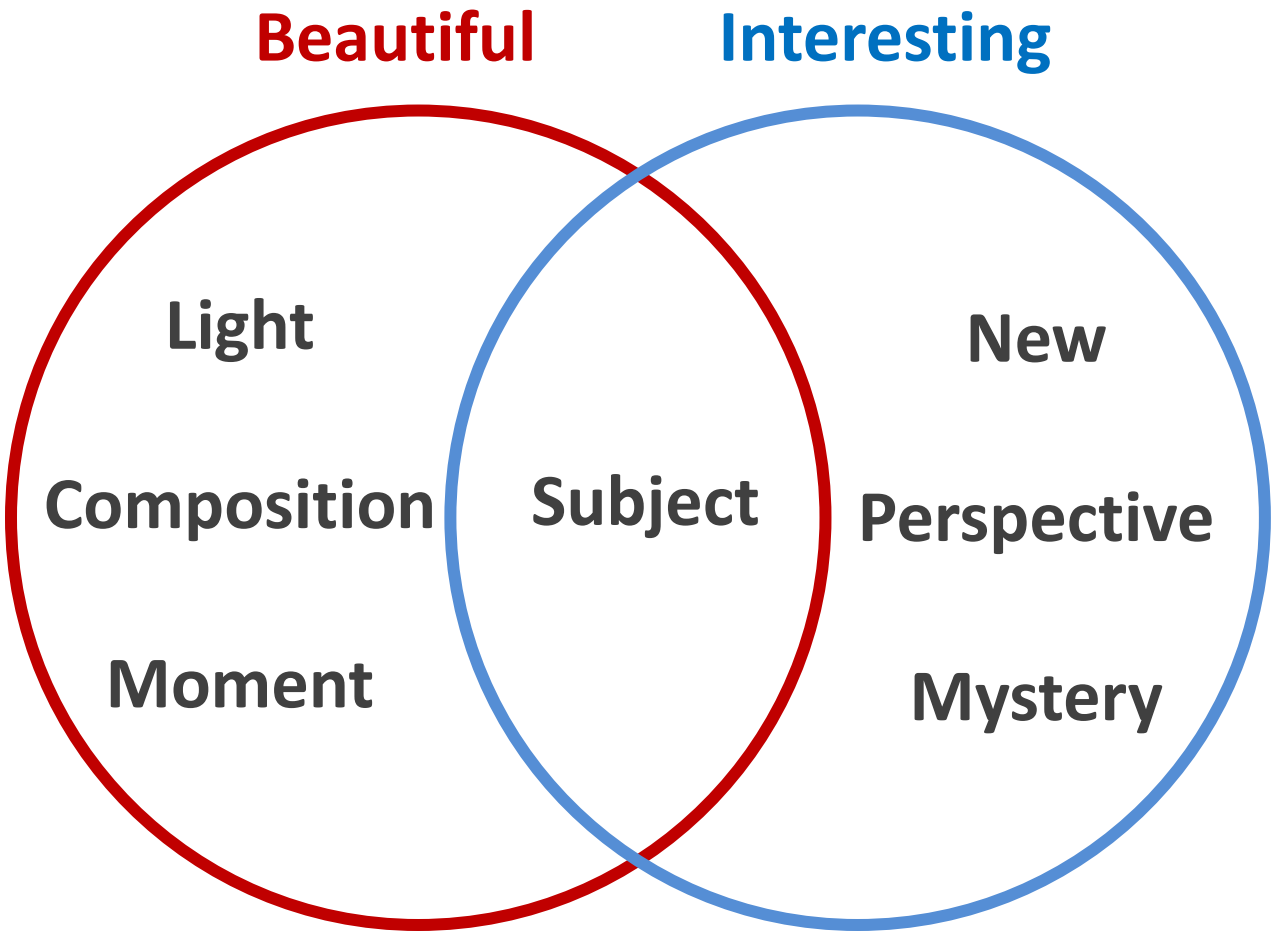
IDEAS ON COMPOSITION

Double/Multiple Exposures

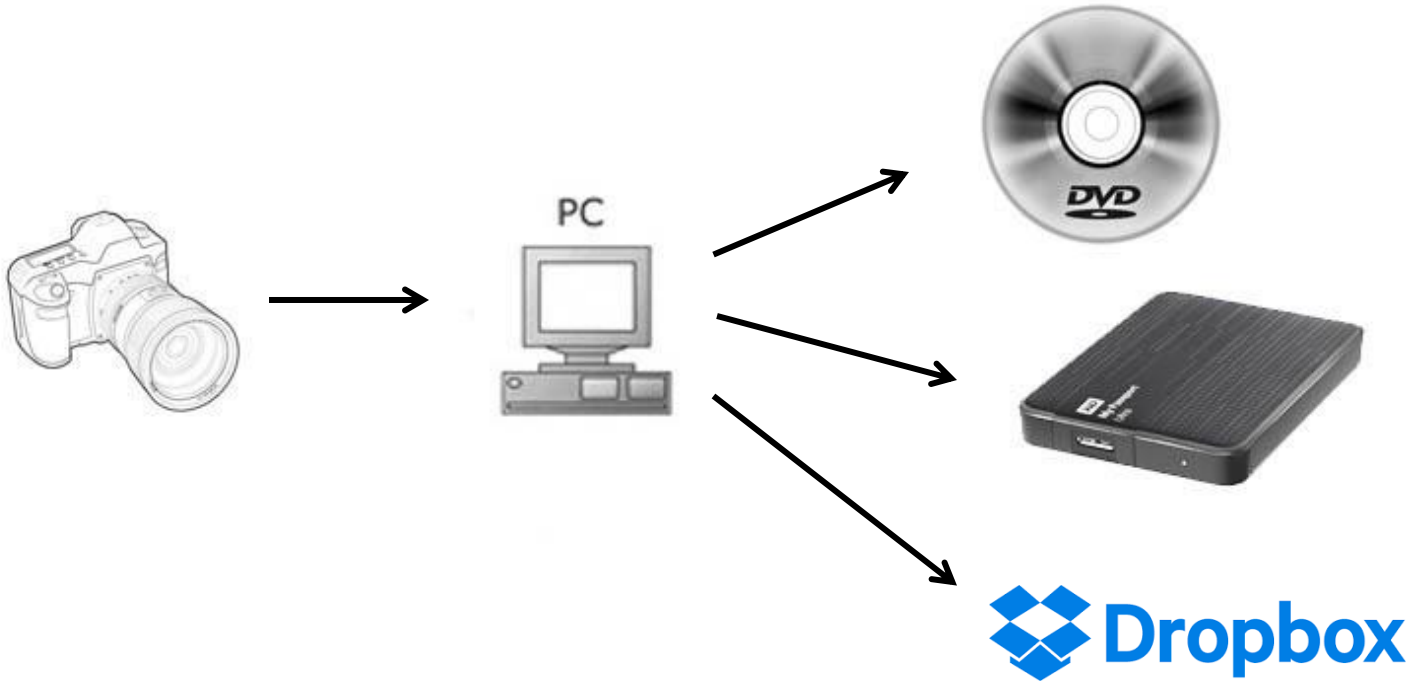
IDEAS ON COMPOSITION

Zoom Art

A GREAT PHOTOGRAPH



BACKUP!



“The single most important component of a camera is the twelve inches behind it.”

– Ansel Adams