

JORDAN SCOTT

ART

WELCOME

Digital Photography for Beginners *Getting Off Auto!*



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

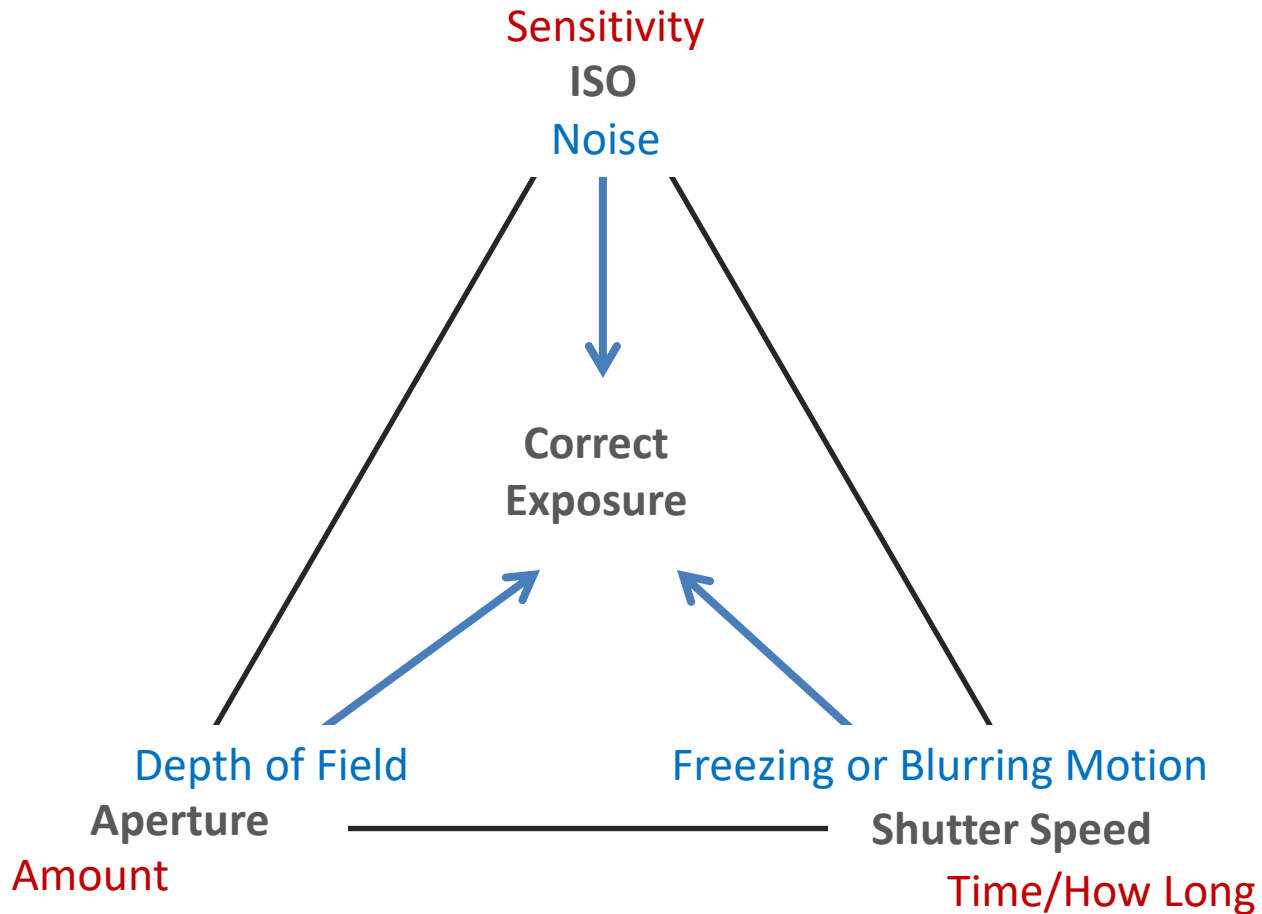
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*“The single most important
component of a camera is
the twelve inches behind it.”*

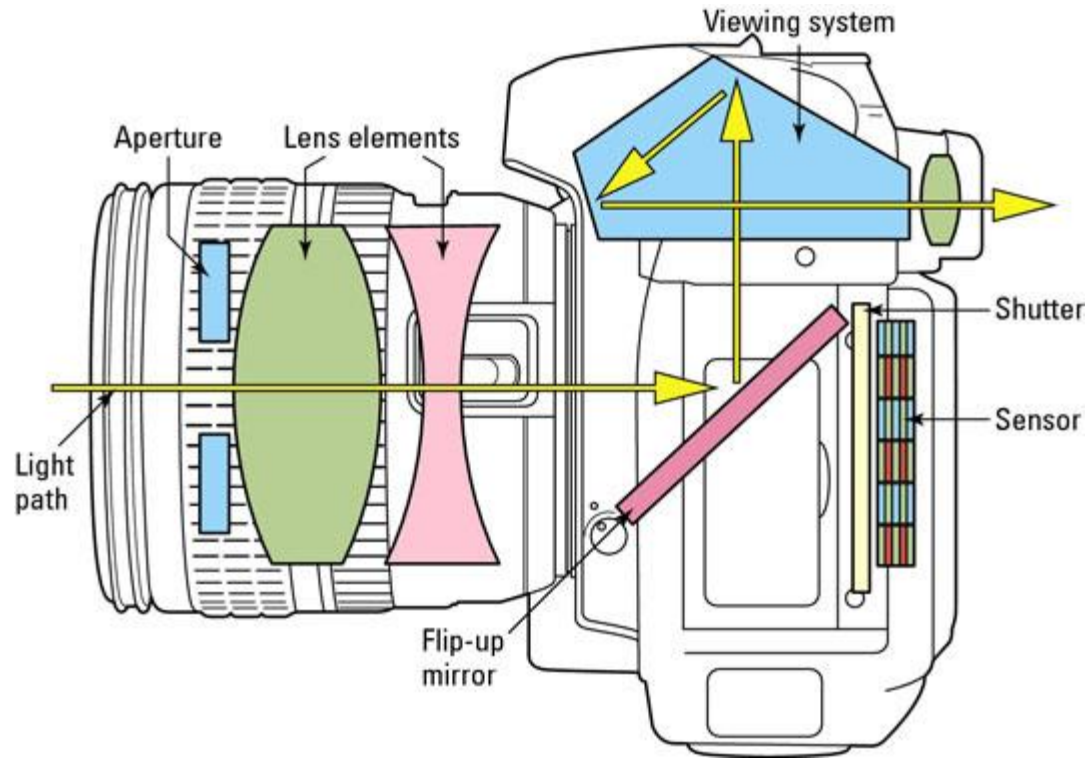
– Ansel Adams



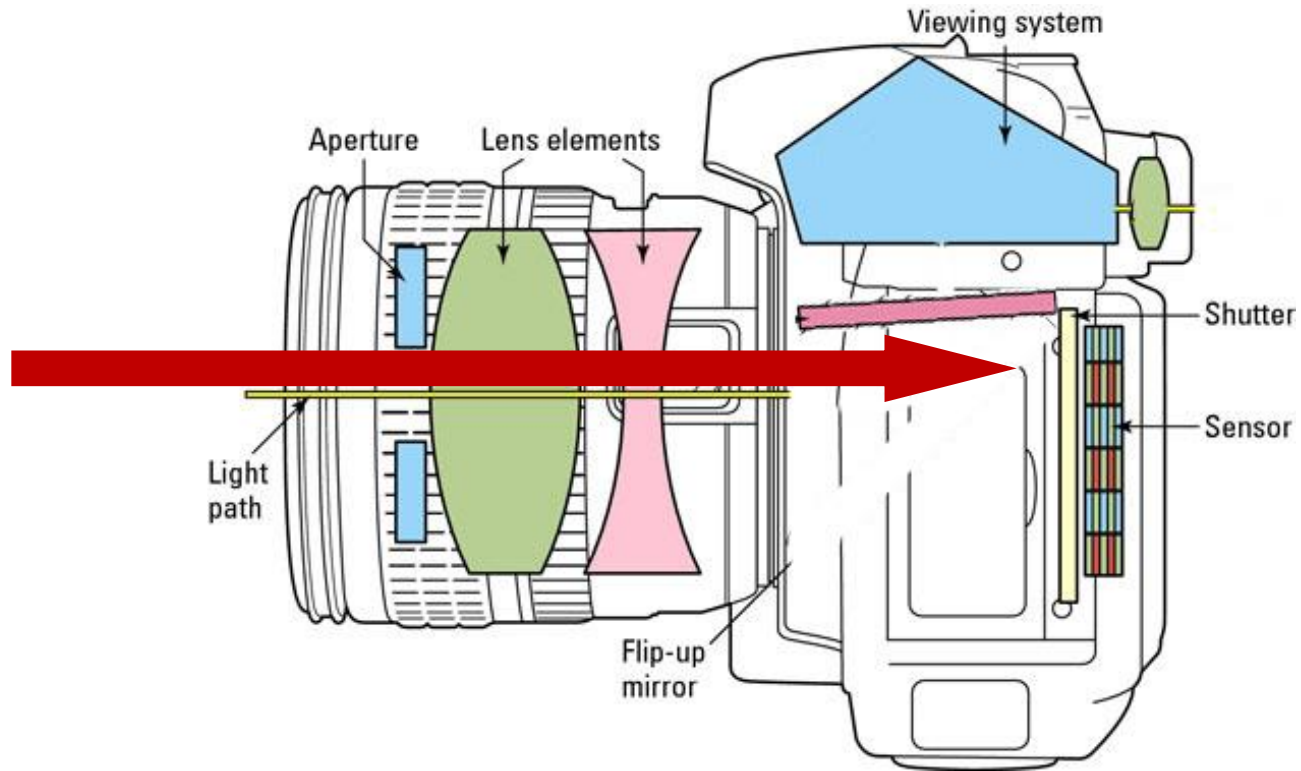
THE EXPOSURE TRIANGLE



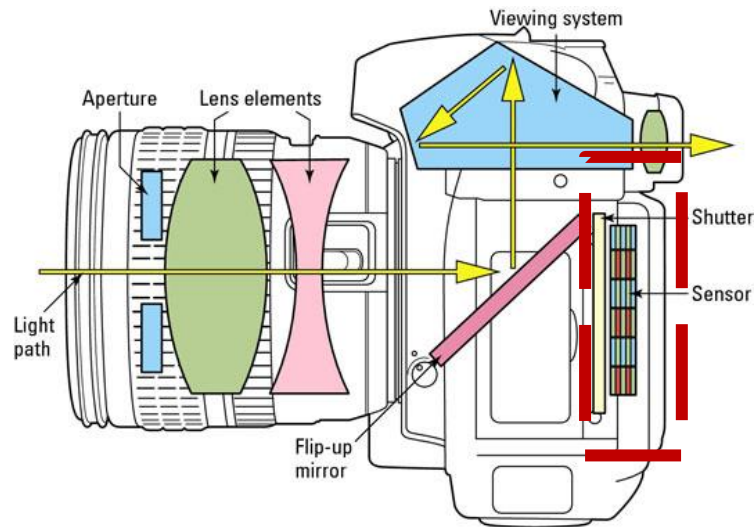
HOW A DIGITAL CAMERA WORKS



HOW A DIGITAL CAMERA WORKS



THE CAMERA IMAGE SENSOR



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THE CAMERA IMAGE SENSOR

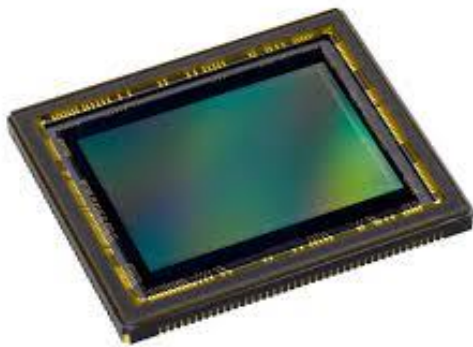
Camera **Sensor Size** Comparison



THE LCD SCREEN



THE SENSOR + LCD SCREEN



HOLDING THE CAMERA

Thumb on the Top



Thumb on the Bottom



IMPORTANT CAMERA SET-UP

File Type: JPEG vs. RAW

Dioptric Adjustment

Drive Mode

Auto Focus/Focus Points

White Balance

Mode Dial

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Drive Mode

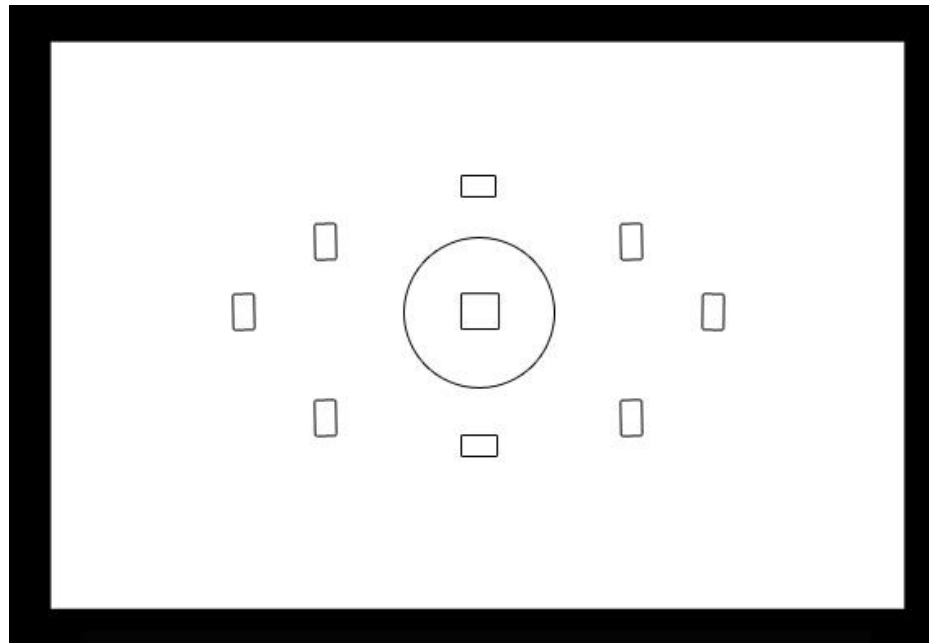
Auto Focus/Focus Points

White Balance

Mode Dial

IMPORTANT CAMERA SET-UP

Auto Focus/Focus Points



IMPORTANT CAMERA SET-UP

File Type: JPEG vs. RAW

Dioptric Adjustment

Drive Mode

Auto Focus/Focus Points

White Balance (temporarily at Auto)

Mode Dial

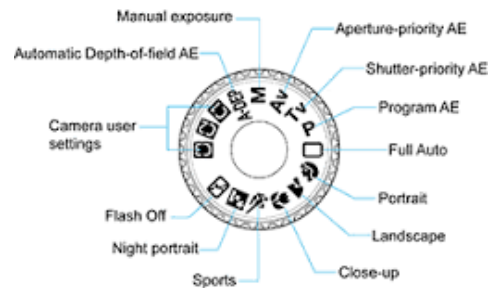
IMPORTANT CAMERA SET-UP

File Type: JPEG vs. RAW
Dioptric Adjustment
Drive Mode
Auto Focus/Focus Points
Metering Patterns
ISO (temporarily at 400)
White Balance (temporarily at Auto)

Mode Dial

IMPORTANT CAMERA SET-UP

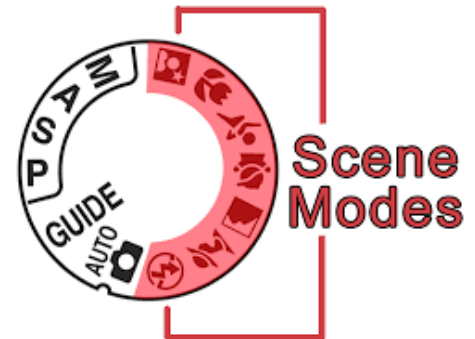
Mode Dial



CANON

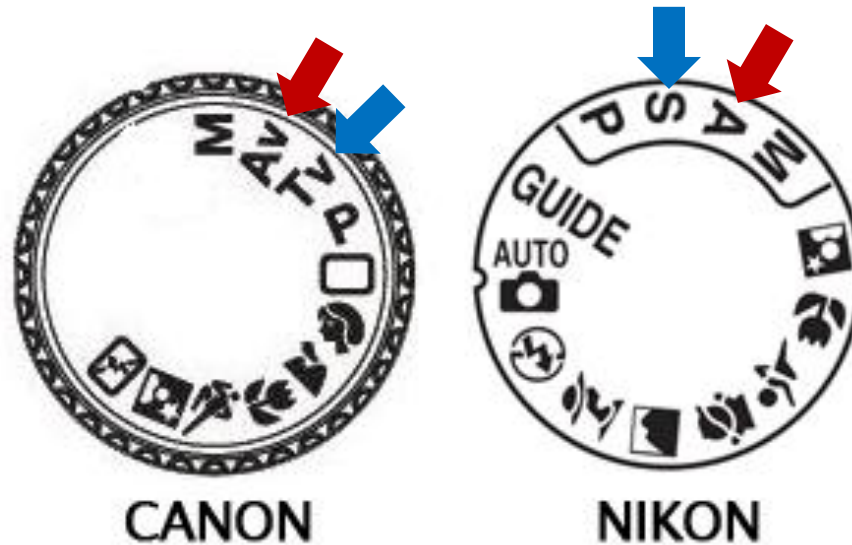


NIKON



IMPORTANT CAMERA SET-UP

Mode Dial



➡ AV or A = Aperture Priority

➡ TV or S = Shutter Priority



SHUTTER SPEED = TIME

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



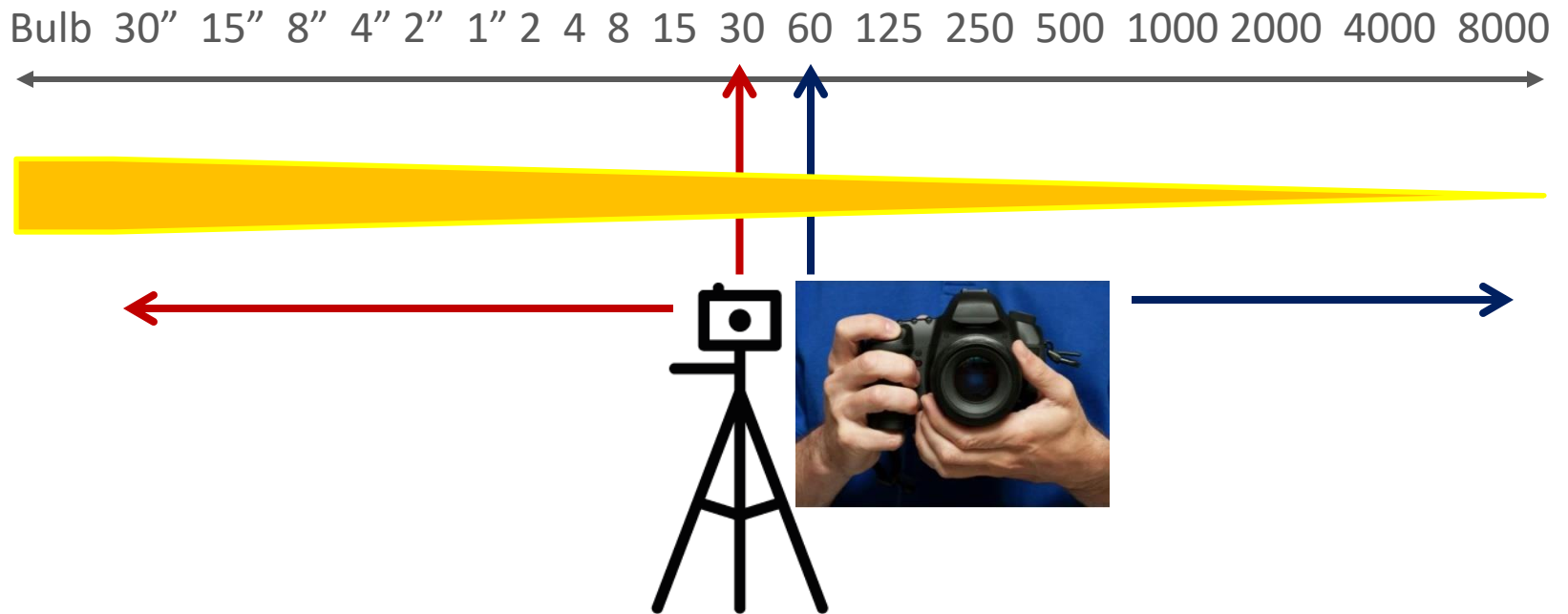
More Light

Less Light

Stops of Light

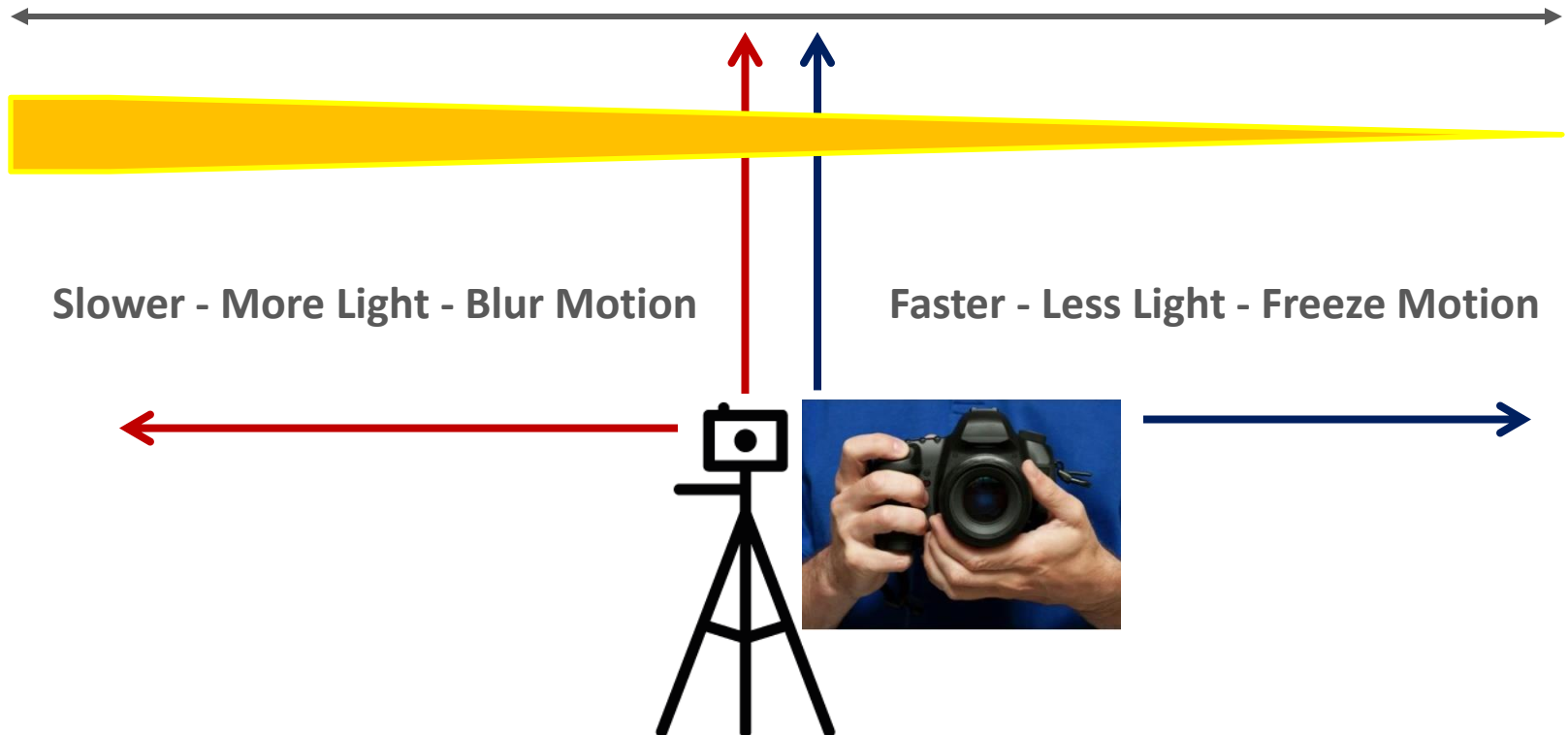
Each full stop = halving or doubling of light

SHUTTER SPEED

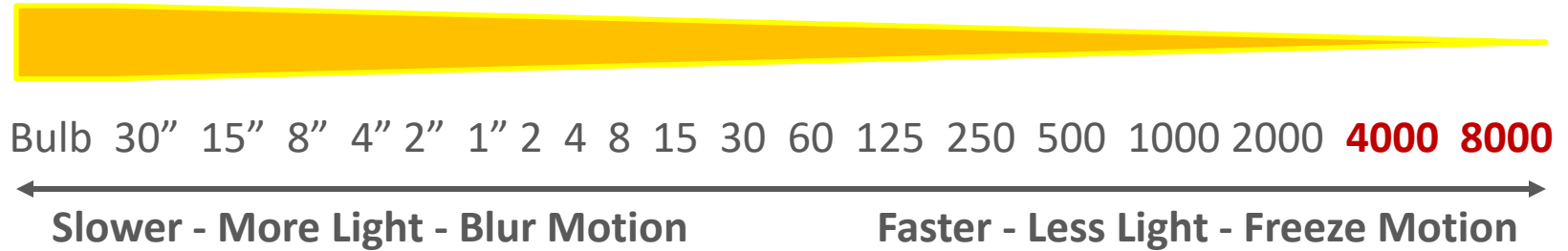


SHUTTER SPEED

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

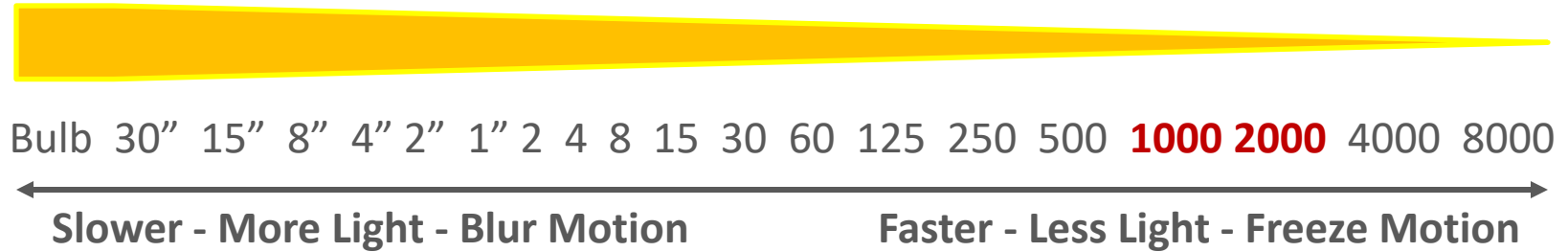


SHUTTER SPEED



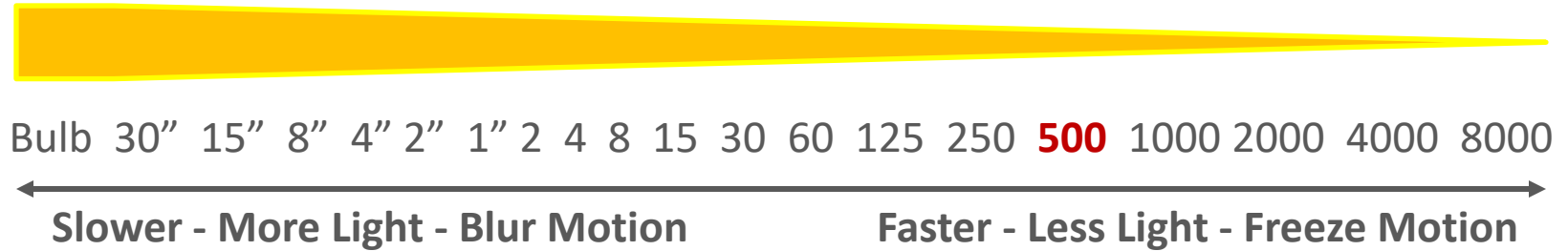
Freezing really fast moving objects

SHUTTER SPEED



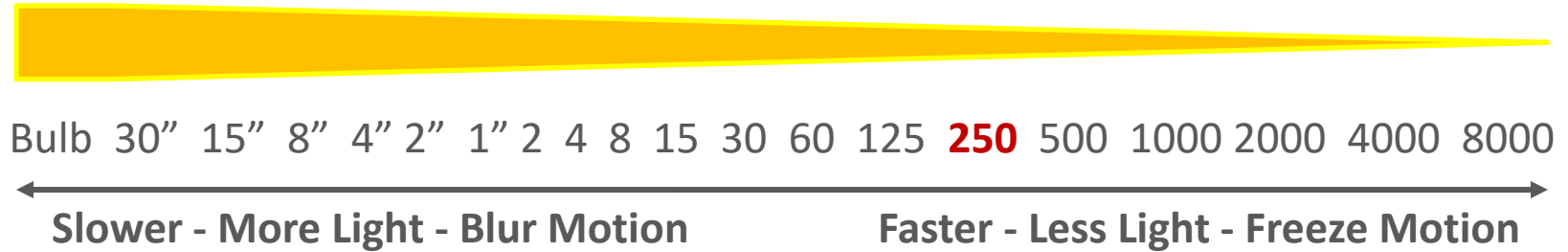
Freezing fast motion like jumping dog, sports or fast vehicle

SHUTTER SPEED



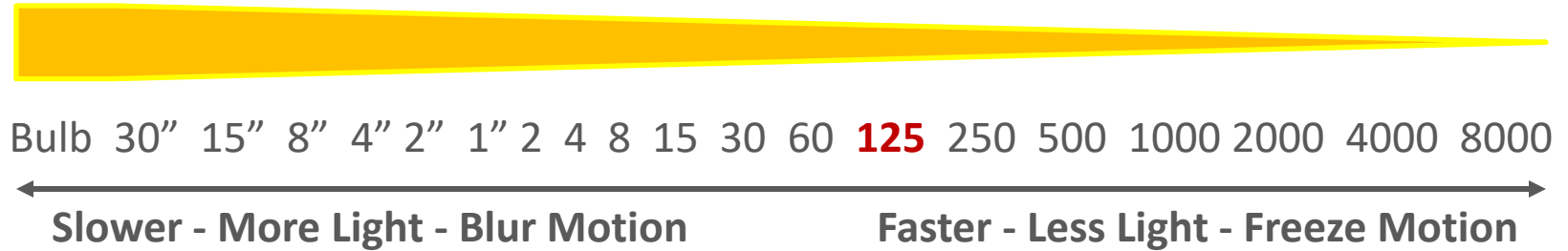
Minimum for relatively fast human action like some sports dancing

SHUTTER SPEED



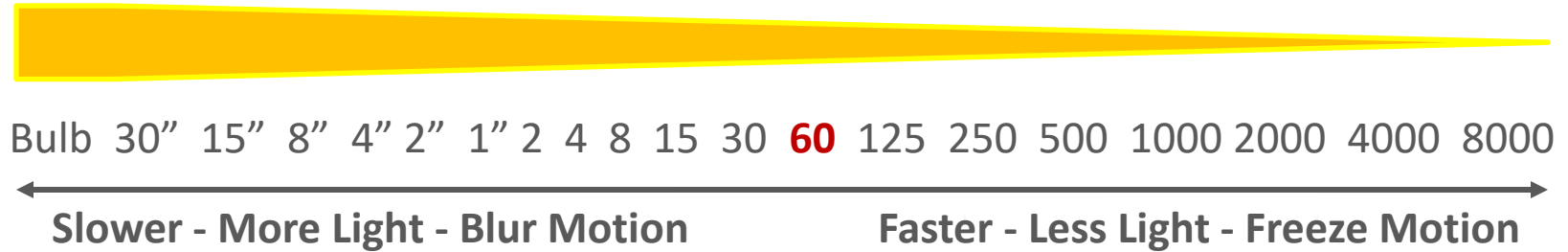
Slow human action
or slow moving animals

SHUTTER SPEED



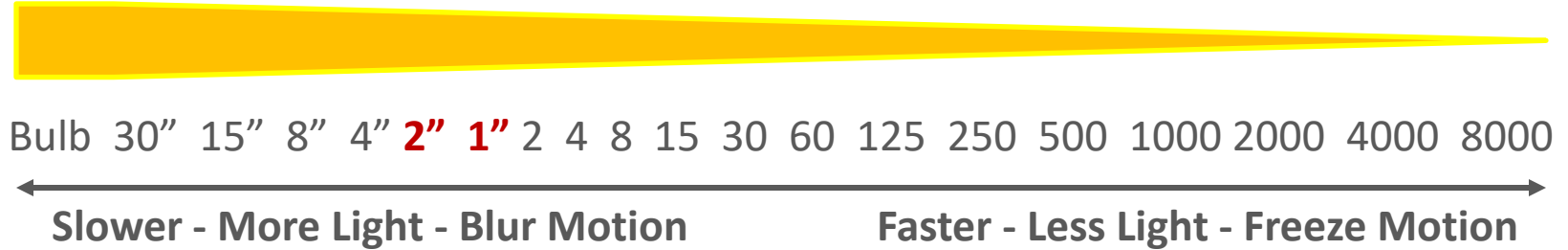
Minimum for portraits
and panning vehicles

SHUTTER SPEED

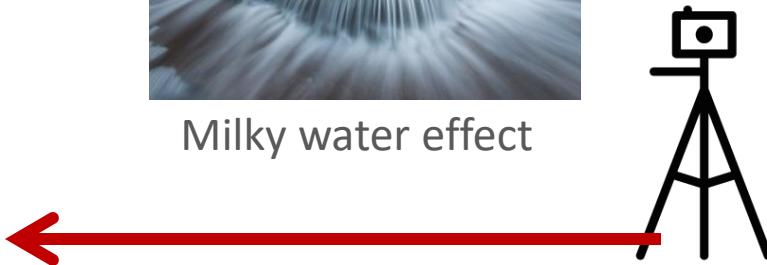


Minimum to avoid hand-held camera shake

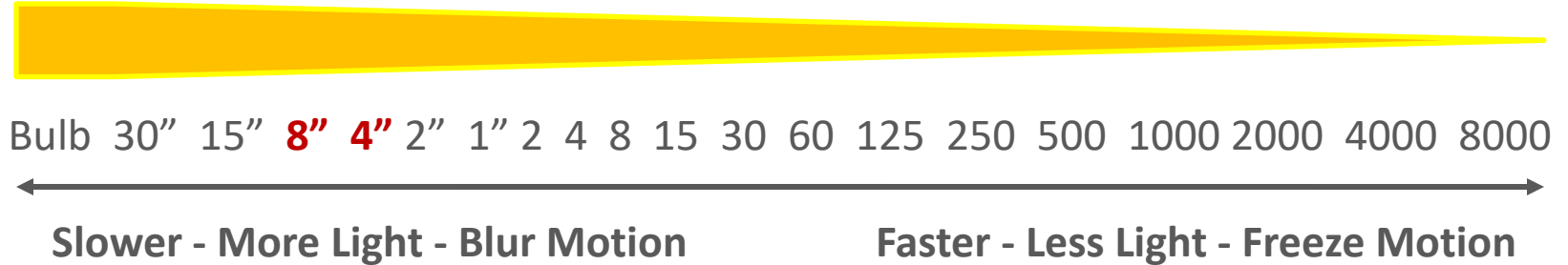
SHUTTER SPEED



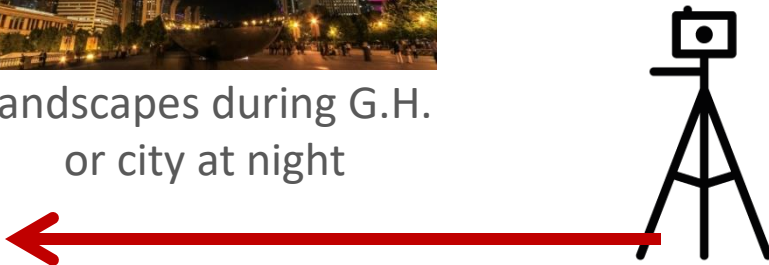
Milky water effect



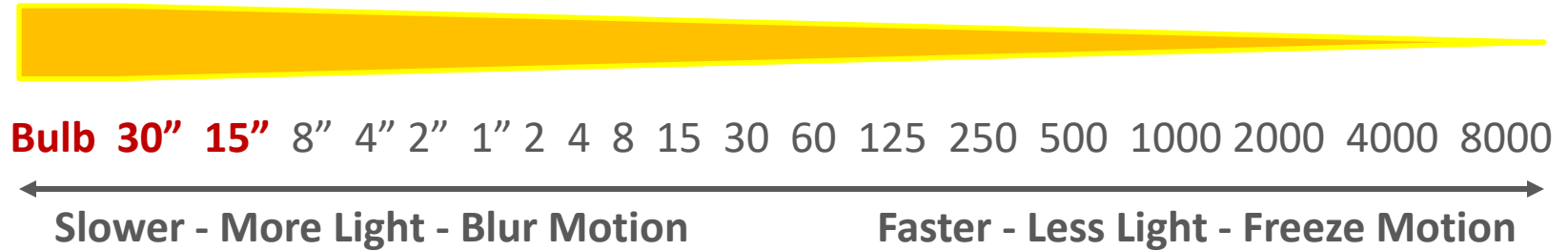
SHUTTER SPEED



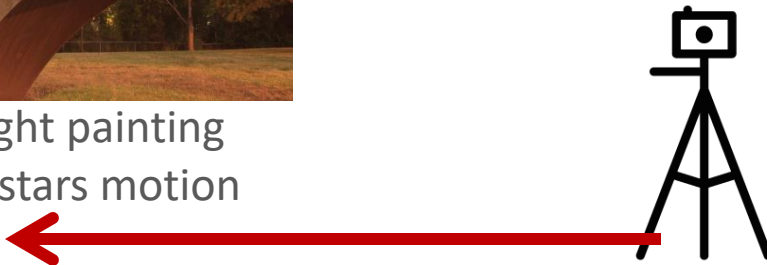
Landscapes during G.H.
or city at night



SHUTTER SPEED



Light painting
or stars motion



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

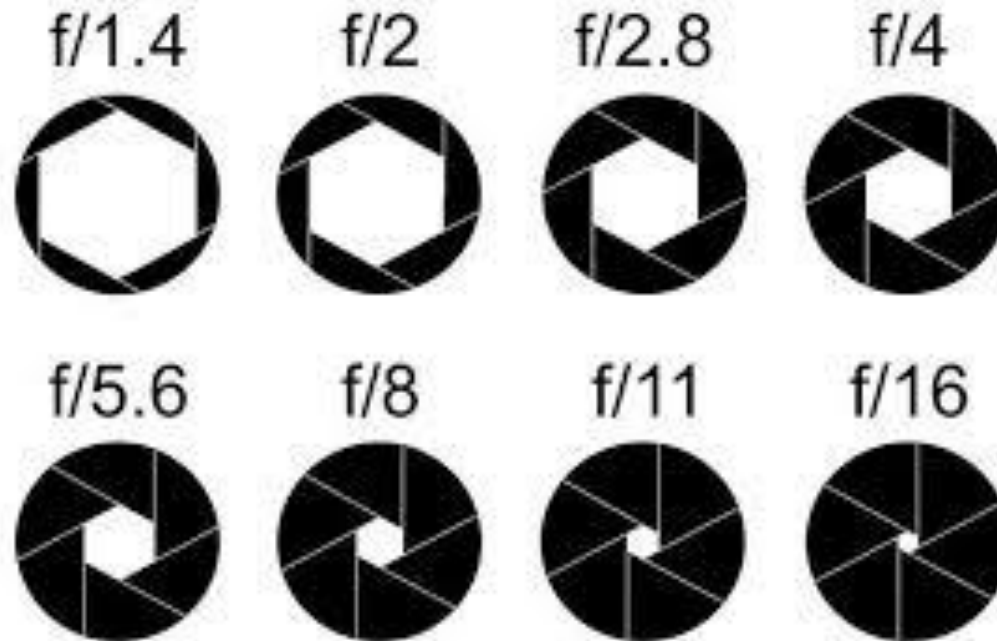


APERTURE

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

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



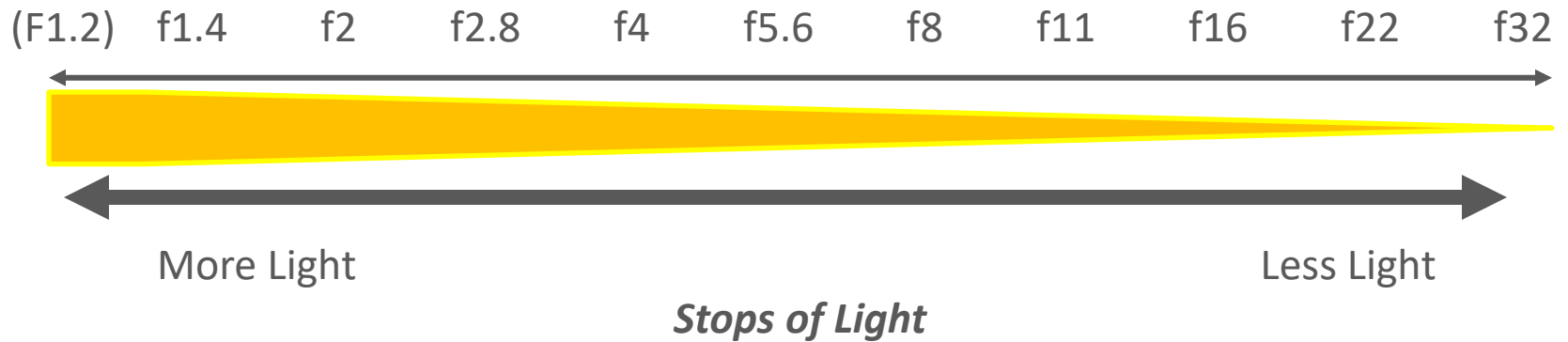
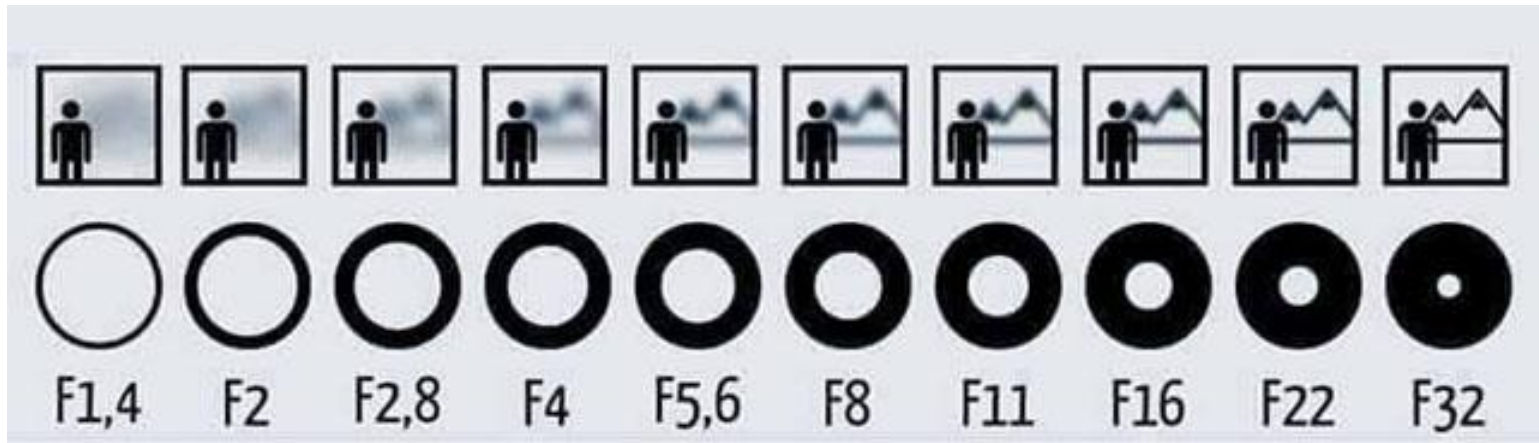
More Light = *“Open Up”*

Less Light = *“Stop Down”*

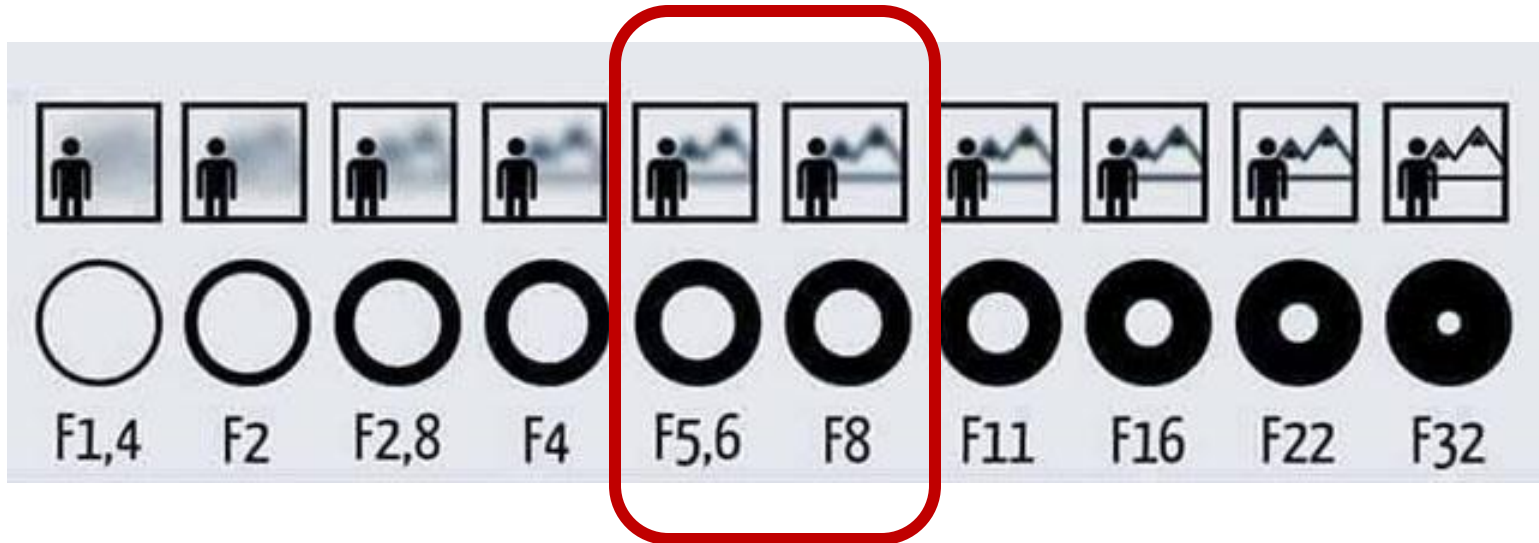
Stops of Light

Each full stop = halving or doubling of light

APERTURE & DEPTH OF FIELD



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

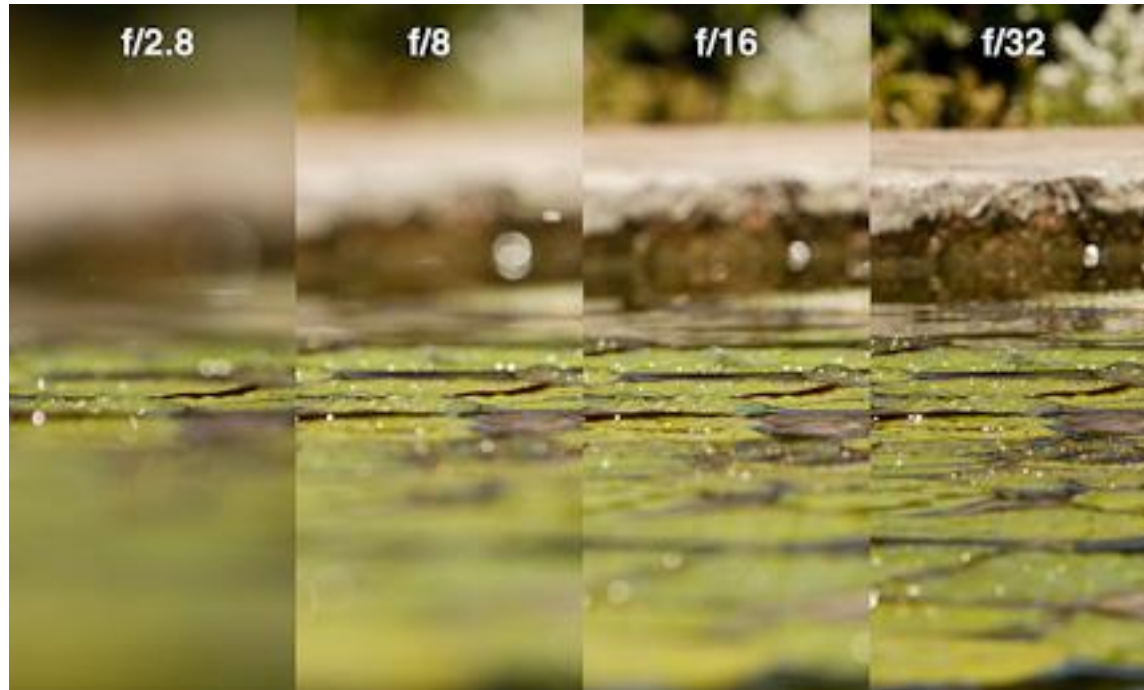


f/22 - small aperture
Deep Depth of Field



f/2.8 - large aperture
Shallow Depth of Field

APERTURE & DEPTH OF FIELD



“Open Up” = Shallow Depth of Field

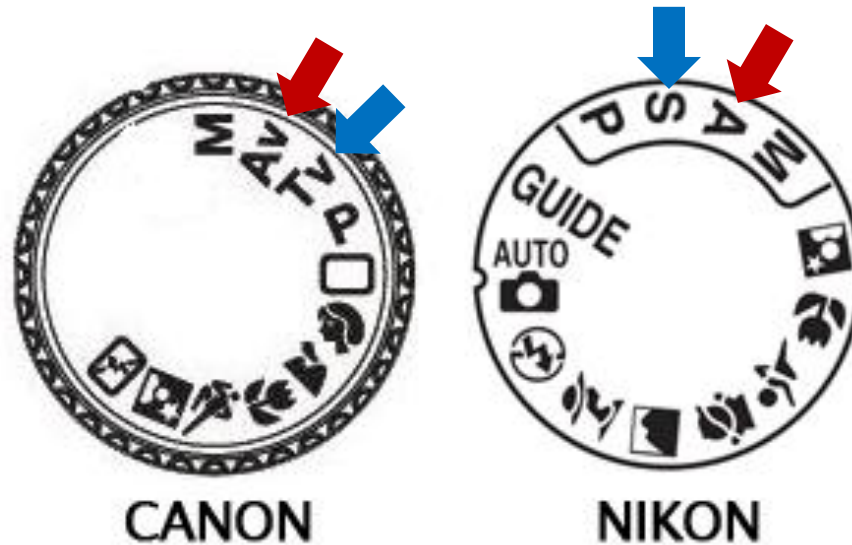
“Stop Down” = Maximum Depth of Field



APERTURE & DEPTH OF FIELD

IMPORTANT CAMERA SET-UP

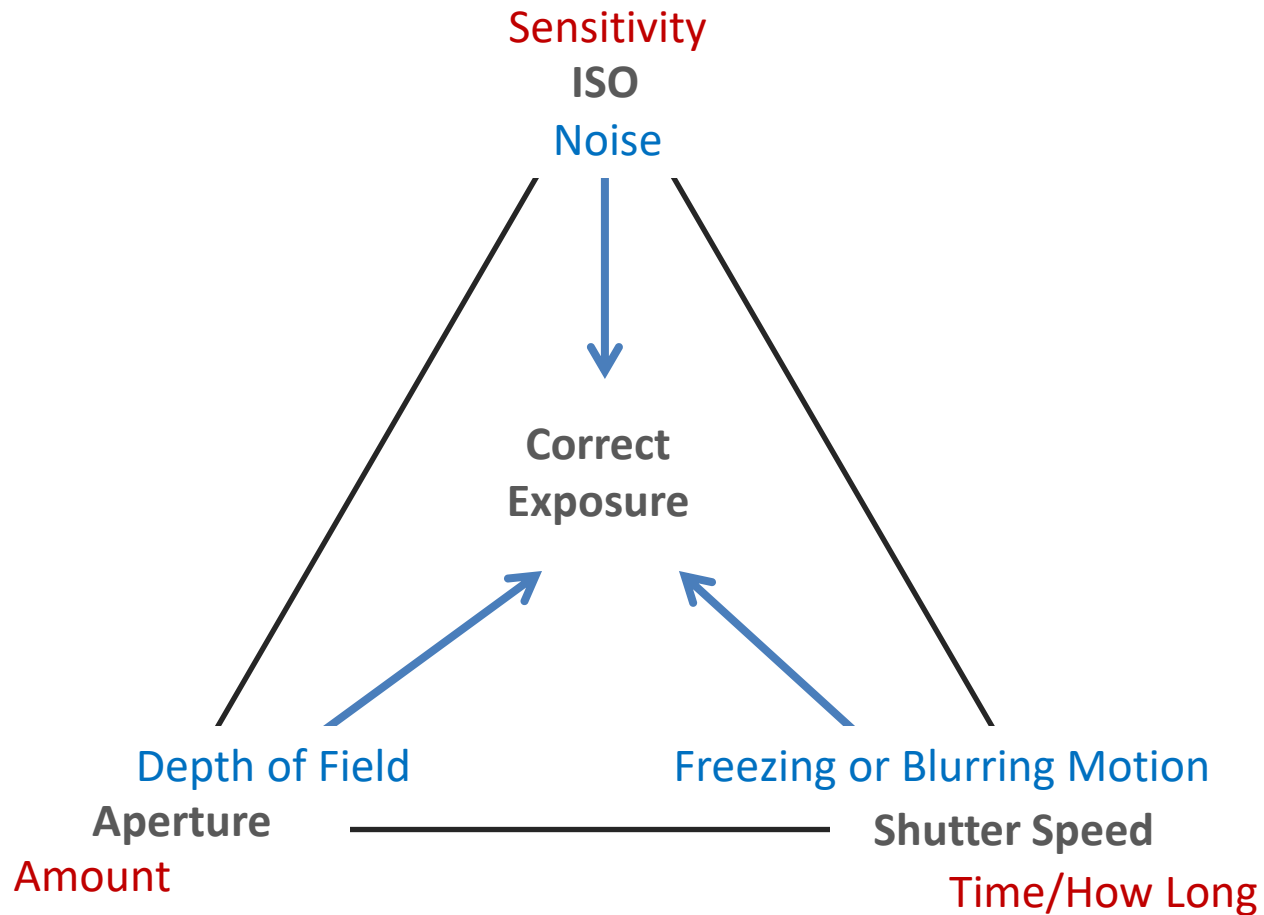
Mode Dial



➡ AV or A = Aperture Priority

➡ TV or S = Shutter Priority

THE EXPOSURE TRIANGLE



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 →



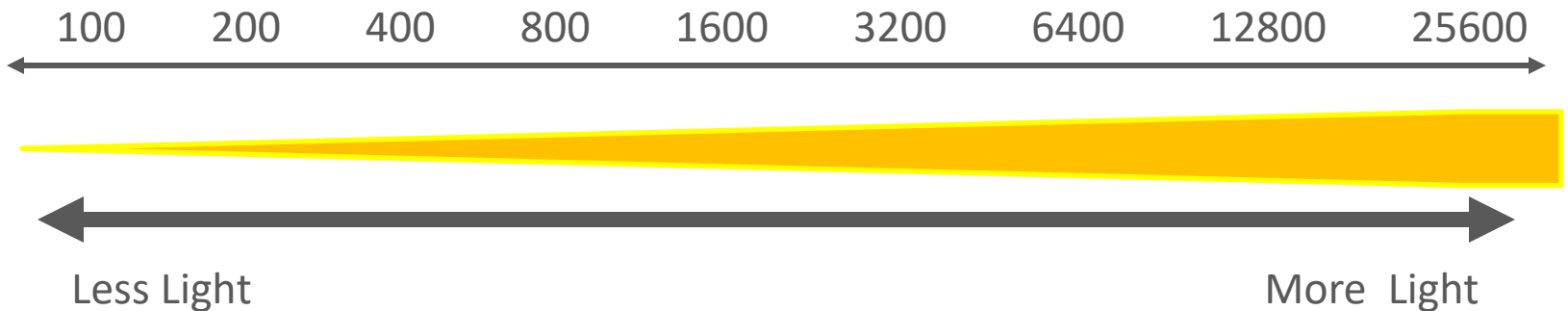
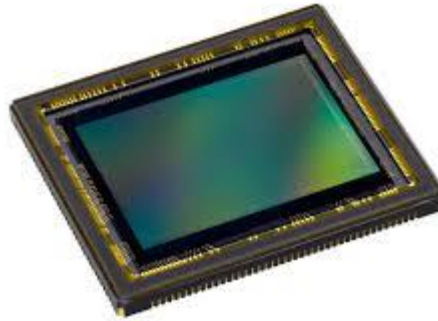
← More Light

Less Light →

Stops of Light

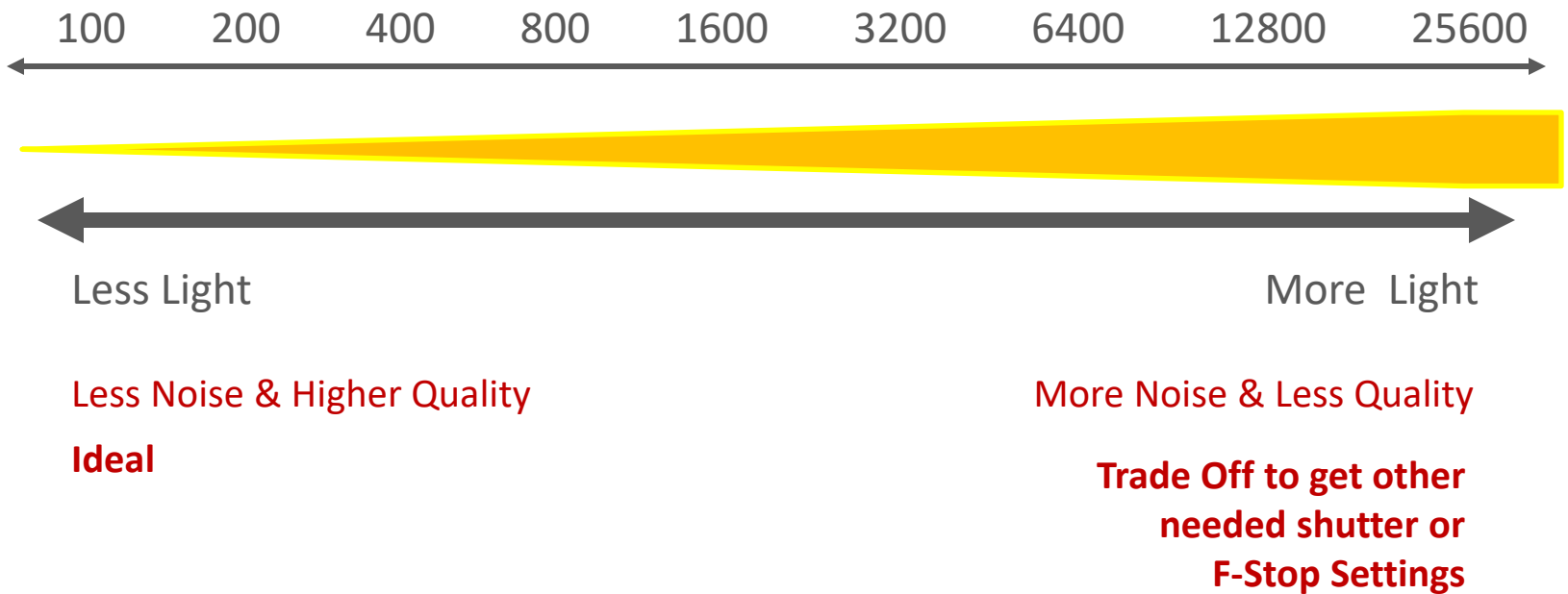
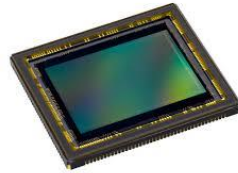
Each full stop = halving or doubling of light

ISO & THE IMAGE SENSOR

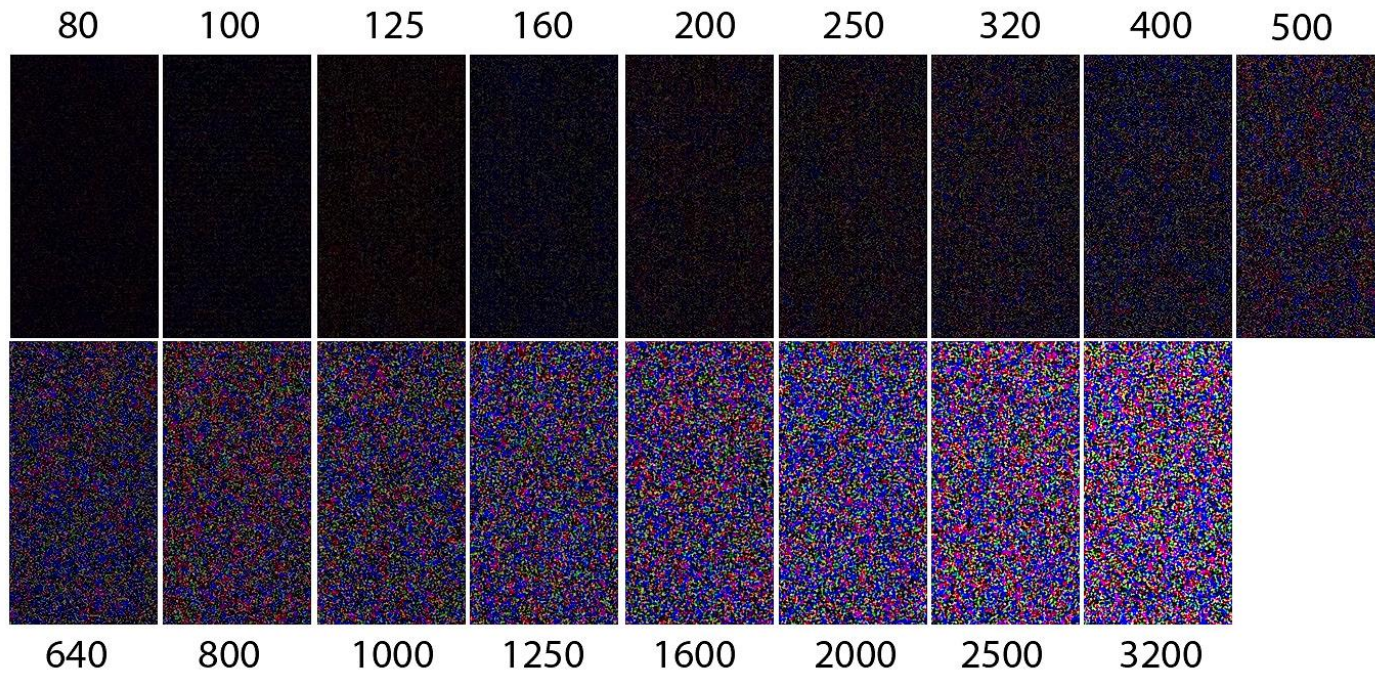


Stops of Light
Each full stop = halving or doubling of light

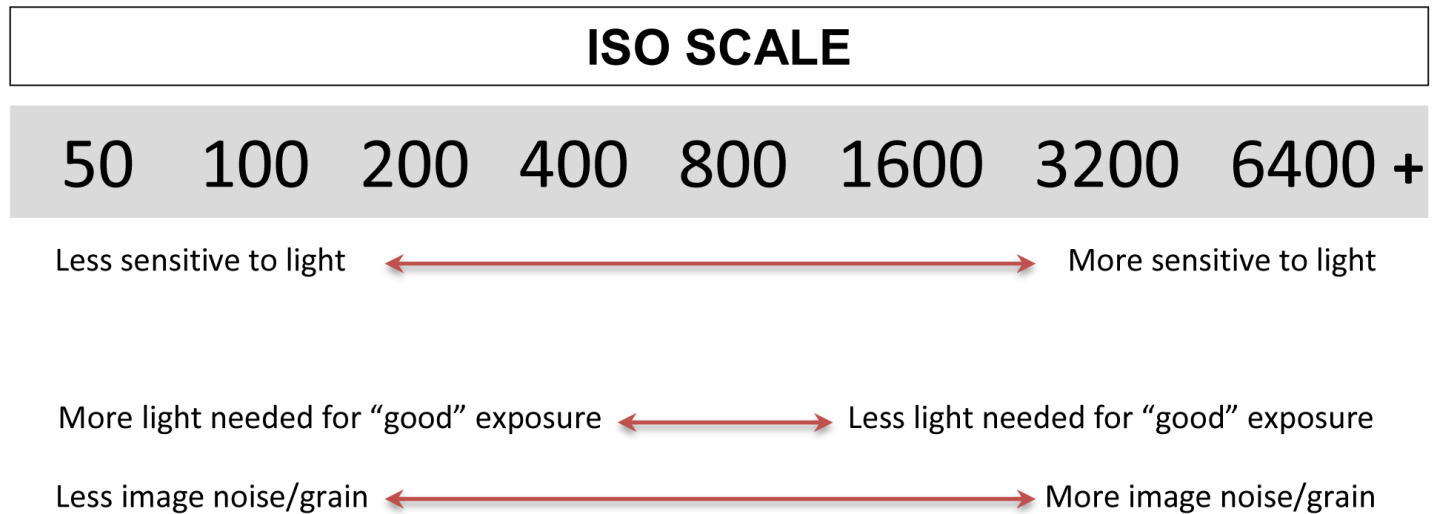
ISO & THE IMAGE SENSOR



ISO & THE IMAGE SENSOR



ISO & THE IMAGE SENSOR



SHUTTER SPEED, APERTURE & ISO

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

100 200 400 800 1600 3200 6400 12800 25600

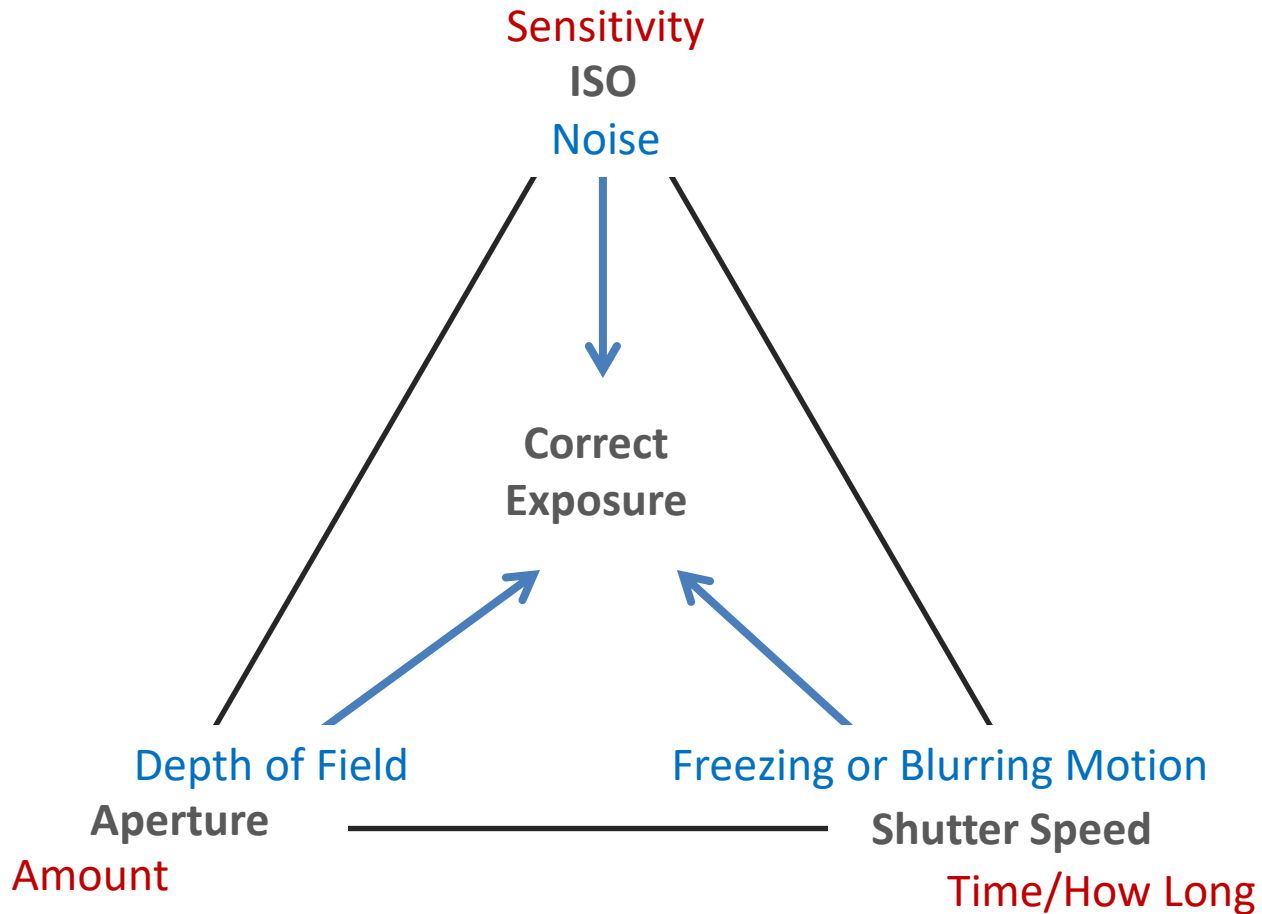
← Less Light

Less Noise & Higher Quality

More Light →

More Noise & Less Quality

THE EXPOSURE TRIANGLE



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 Less Light = Faster →

Blur Motion

Freeze Motion

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

← More Light = "Open Up" = Larger Hole Less Light = "Stop Down" = Smaller Hole →

Shallow Depth of Field

Deep Depth of Field

100 200 400 800 1600 3200 6400

← Less Light More Light →







Less Noise & Higher Quality


More Noise & Lower Quality

ISO & THE IMAGE SENSOR

**Is *auto* ISO
Good or Bad?**

WHITE BALANCE

<div>AWB</div> <div>Auto</div>	<div></div> <div>Tungsten</div>	<div></div> <div>Fluorescent</div>	
<div></div> <div>Daylight</div>	<div></div> <div>Cloudy</div>	<div></div> <div>Flash</div>	<div></div> <div>Shade</div>

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

CLEANING



FIRMWARE UPDATES

Drivers & Downloads

Operating System: Windows 10 (x64) (Detected) | Language: English

Software | **Firmware** | Utilities

File Name	Date	File Size	
EOS 70D Firmware Update, Version 1.1.2 [Windows]	09/29/16	23.80 MB	SELECT
EOS 70D Firmware Update, Version 1.1.2 [Mac OS X]	09/29/16	23.86 MB	SELECT



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

ESSENTIAL PHOTOGRAPHY TIPS

Photograph What You Are Interested In!

Focusing on what you enjoy and are interested in will keep you interested and improving. This will allow you to overcome learning obstacles.

ESSENTIAL PHOTOGRAPHY TIPS

Photograph What You Are Interested In!



ESSENTIAL PHOTOGRAPHY TIPS

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 them, especially using the power points. This is not a hard rule, but a good guideline to follow to get your subject out of center for more interesting look.

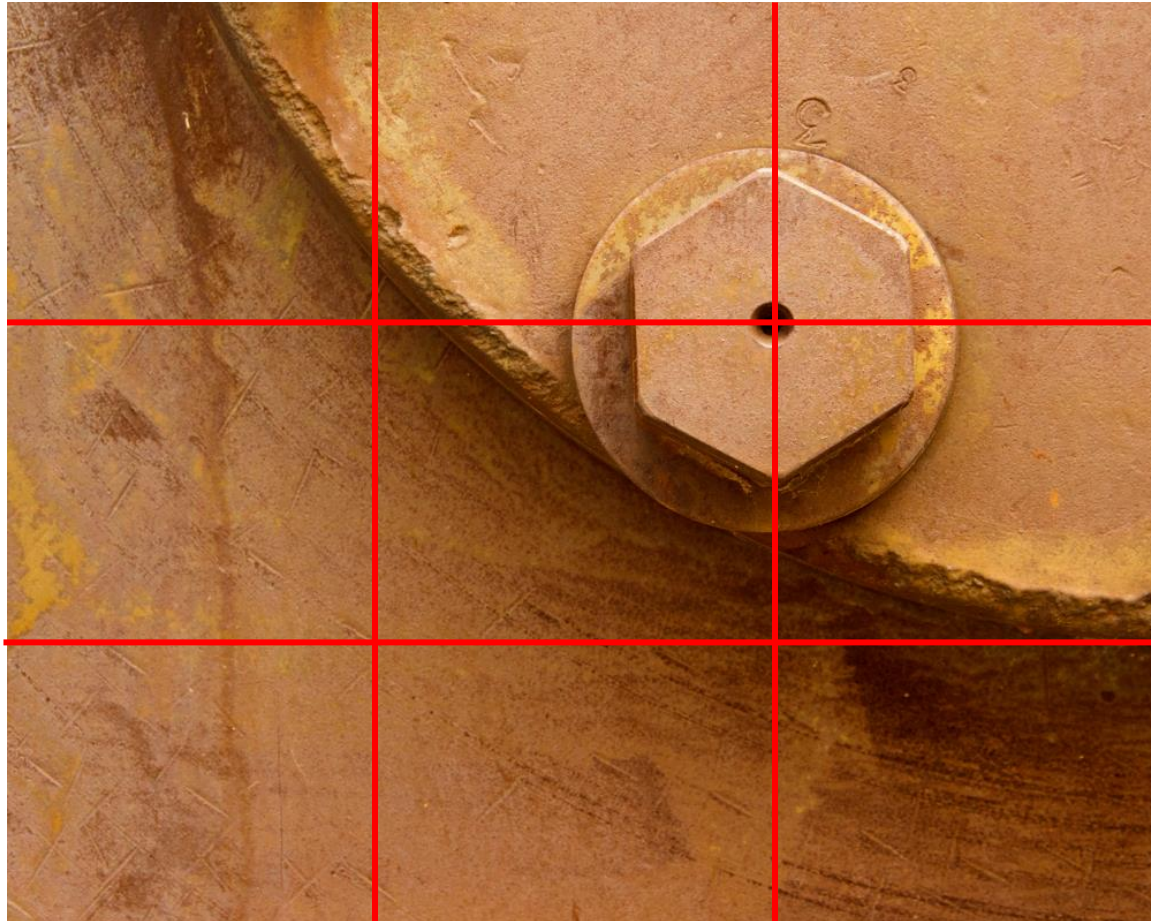
ESSENTIAL PHOTOGRAPHY TIPS

The “Rule of Thirds”



ESSENTIAL PHOTOGRAPHY TIPS

The “Rule of Thirds”



ESSENTIAL PHOTOGRAPHY TIPS

Fill the Frame

Don't leave too much space around your main subject. This deemphasizes the importance of your subject. Move in, or zoom in, closer

ESSENTIAL PHOTOGRAPHY TIPS

Fill the Frame



ESSENTIAL PHOTOGRAPHY TIPS

Fill the Frame



ESSENTIAL PHOTOGRAPHY TIPS

Make Use of “Leading Lines”

Lines in a scene can help control where
viewers eyes moves

ESSENTIAL PHOTOGRAPHY TIPS

Make Use of “Leading Lines”



ESSENTIAL PHOTOGRAPHY TIPS

Bad Lines



ESSENTIAL PHOTOGRAPHY TIPS

Bad Lines



ESSENTIAL PHOTOGRAPHY TIPS

Change Your Perspective

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

ESSENTIAL PHOTOGRAPHY TIPS

Change Your Perspective



ESSENTIAL PHOTOGRAPHY TIPS

Hand-held Camera Shake

Prevent blurry pictures by avoiding hand-held camera shake

If hand holding then 1/60 minimum safety speed. Shutter speed and lens focal length relationship for longer than 50mm lens. Image stabilizing lenses can get shutter speed down a stop.

ESSENTIAL PHOTOGRAPHY TIPS

Wide Aperture

Wide aperture to make subject pop

Low F-stop, open up, to blur background behind your subject and keep main subject in focus.

ESSENTIAL PHOTOGRAPHY TIPS

Wide Aperture



ESSENTIAL PHOTOGRAPHY TIPS

Fill the Frame + Wide Aperture



ESSENTIAL PHOTOGRAPHY TIPS

Prime vs. Zoom Lenses

Prime has wider apertures like F1.4 & F1.8

Zoom has F2.8 – F3.5 max

Therefore better in low light situations and
create shallower depth of field.

Prime lenses usually have much sharper optics.

ESSENTIAL PHOTOGRAPHY TIPS

The Sunny 16 Rule

On a clear and sunny day, at an aperture of F/16, you will get a correct exposure if you use a shutter speed that's the inverse of the ISO speed you're using.

Example: If it's a sunny day, and have your aperture set to F/16 and ISO set to 200, to correctly expose your image the shutter speed needs to be set to 1/200 (the inverse of the ISO number).

ESSENTIAL PHOTOGRAPHY TIPS

Other “F-Rules” for Different
Shooting Conditions

The snowy/sandy F/22 rule.

The overcast F/8 rule.

The slightly overcast F/11 rule.

The heavy overcast F/5.6 rule.

The sunset F/4 rule.

ADDITIONAL ACCESSORIES



35mm or 50mm
50mm



UV Filter Lens
Protector



Tripod with Ball
Head Mount



Lens Hood



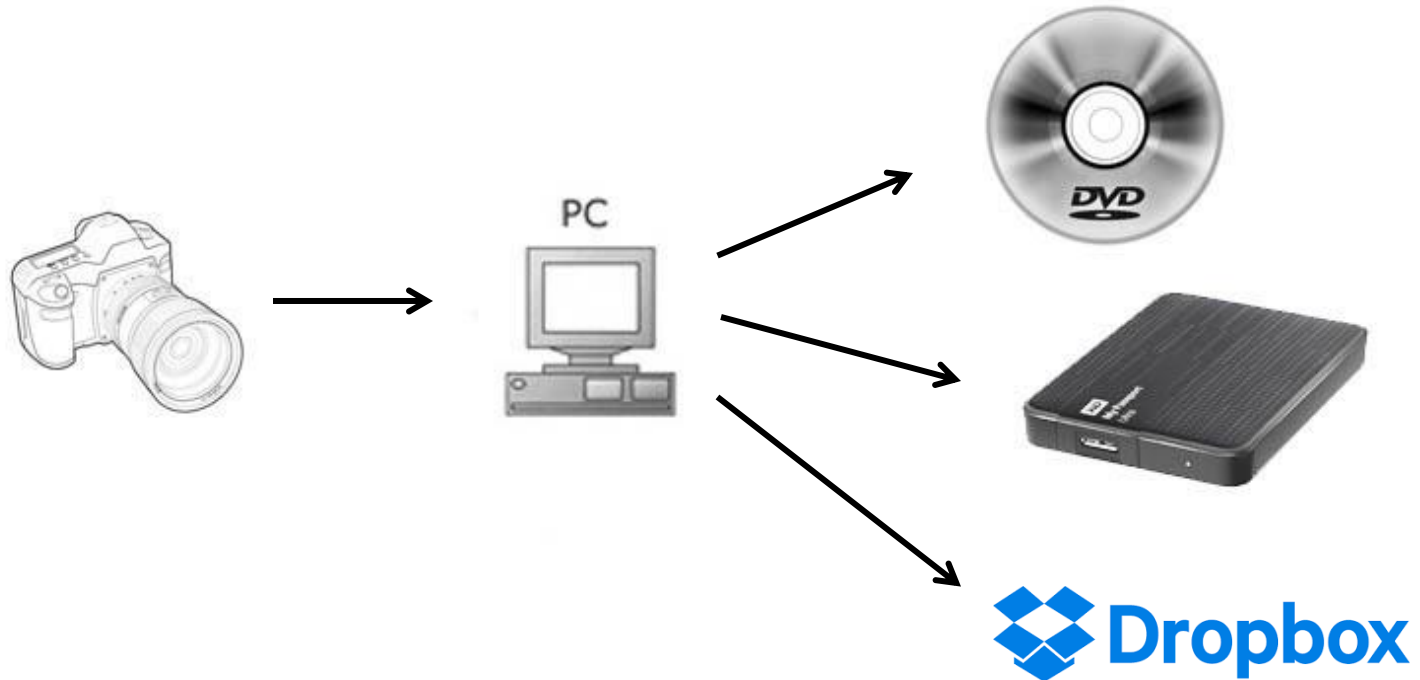
Extra Battery

ADDITIONAL ACCESSORIES

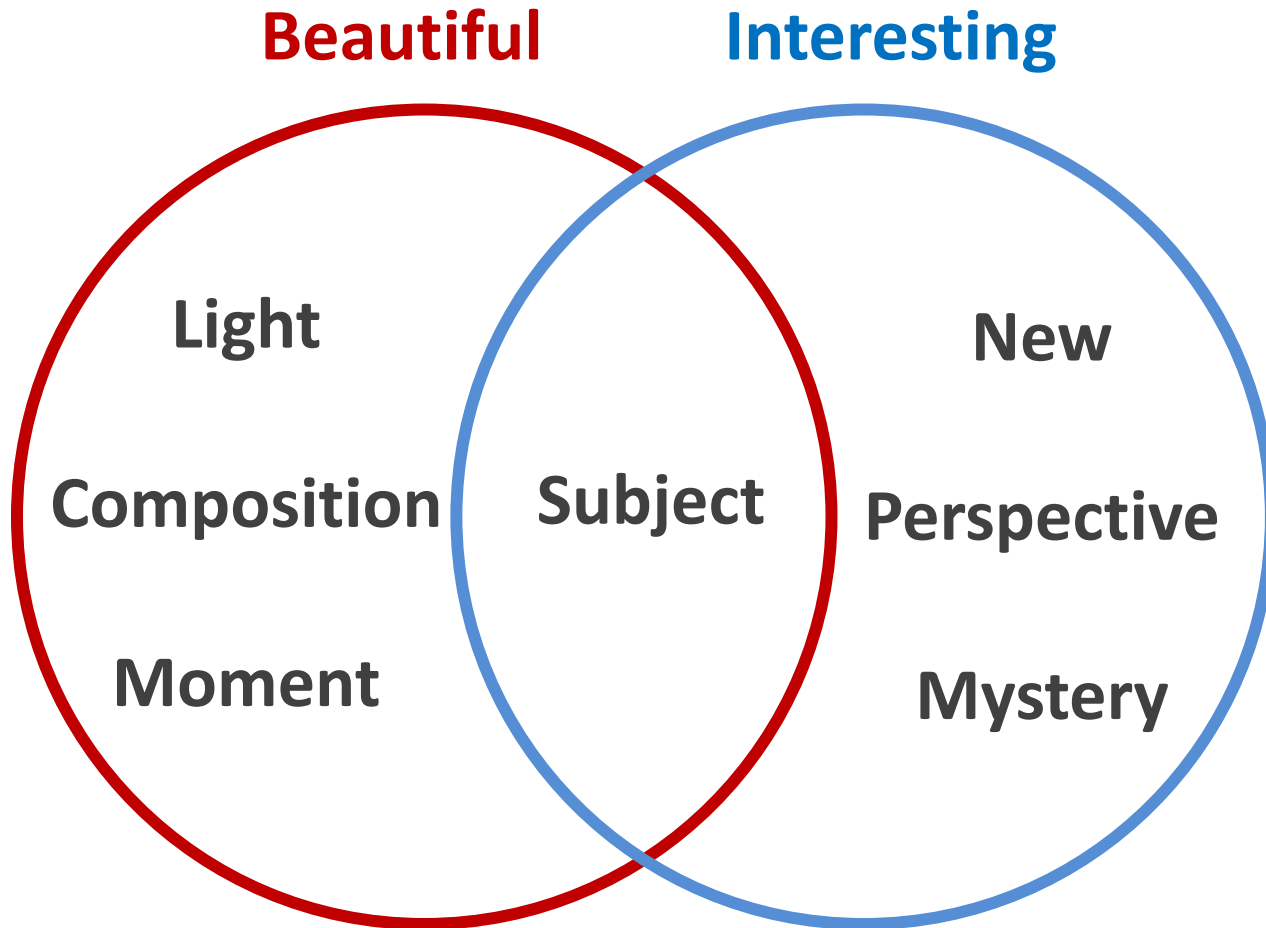
UV Lens Filter/Protector



BACKUP!



A GREAT PHOTOGRAPH



THE PHOTO 5-STEP

Not Necessarily in Order



Subject + P.O.V. + Exposure + Focus + Composition

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

– Ansel Adams

