PHOTO CLASS RESOURCES

shooting modes

Automatic

Full Auto: Camera chooses ISO, Aperture, and Shutter Speed based on available light. Pop-up flash often fires even in moderate light.

Program: Camera chooses Aperture, and Shutter Speed, but user selects ISO. Can use flash if necessary.

Pre-Set Modes

Action: Attempts fastest Shutter Speed. Camera usually limits ISO. If maximum lens aperture is not large, may not shoot fast enough.

Landscape: Prefers narrow aperture for larger DOF, which requires longer shutter speeds. May be limited by ISO.

Close: Camera defaults/preferences vary, but controlling DOF through aperture is camera priority. May be limited by ISO

Portrait: Camera chooses widest aperture for shallow DOF to blur background. In low light, m ay be limited by ISO.

User Control

	Aperture	Shutter	Manual
			
Shutter Speed	Camera	User	User
Aperture	User	Camera	User
ISO	User	User	User

portraits

Priorities:

- **LOW Depth of Field (DOF)**
- Low ISO (if enlargements)

Shooting Modes:

- **PORTRAIT SCENE MODE:** Camera prefers large Aperture, stable Shutter speed & low ISO. Switch to Av Mode for ISO control.
- **Av (Aperture Value)**: User sets Aperture & ISO. Camera balances with Shutter. Increase ISO if shutter requires tripod.

Aperture

f/4 f/5.6 f/8 f/16

ISO

Comments: Wide-open Aperture gives shallow Depth of Field (DOF). ***Scene Modes*** gives Camera control over settings. In ***Av Priority Mode*** User chooses Aperture & ISO. Can choose Auto ISO. With large aperture, shutter speed usually stable unless low light and low ISO.

action

Priorities:

- **Stopping the Motion**
- Maximize Light Gathering

Shooting Modes:

- **ACTION SCENE MODE:** Camera sets fast Shutter & Auto ISO. Switch to Av Mode for ISO control. Increase to allow faster shutter.

- **Tv (Time [Shutter] Value)**: User sets Shutter & ISO. Camera balances with Aperture. Increase ISO if shutter is too slow.

Shutter

ISO

Comments: Shooting fast enough to stop motion requires a lot of light ~ usually accomplished by high ISO. ***Scene Modes*** gives Camera control over settings. Usually limits ISO~400. In ***Tv (S) Priority Mode*** User chooses Shutter & ISO (including Auto). Increase ISO for faster shutter.

landscape

Priorities:

- **High Depth of Field (DOF)**
- Low ISO (if enlargements)

Shooting Modes:

- **LANDSCAPE SCENE MODE:** Camera prefers small Aperture & Auto ISO. Check for slow shutter. Switch to Av Mode for ISO control.
- **Av (Aperture Value)**: User sets Aperture & ISO. Camera balances with Shutter. Increase ISO if shutter is too slow.

Aperture

f/4 f/5.6 f/8 f/16

ISO

Comments: Complete scene in focus [High DOF] is the goal. ***Scene Modes*** gives Camera control over settings. Usually limits ISO~400. Small Aperture & Low Light may require tripod. In ***Av Priority Mode*** User chooses Aperture & ISO. Can choose Auto ISO. Raise ISO for faster shutter.

close-up

Priorities:

- **Stability & Managing DOF**
- Control Light

Shooting Modes:

- **CLOSE-UP SCENE MODE:** Camera prefers balanced DOF & Shutter speed (moderate). Auto ISO.
- **Av (Aperture Value)**: User sets Aperture to control DOF. Camera balances with Shutter. Increase ISO if low light.

Aperture

ISO

Comments: Controlling desired DOF is the key. Close-Up mode varies between cameras. In ***Av Priority Mode*** User chooses Shutter & ISO (including Auto). Increase ISO for faster shutter.

SETTINGS

SHOOTING MODE	
M	Manual
Av	Aperture Priority
Tv	Shutter Priority
P	Program
	AUTO
	Close-Up
	Action
	Landscape
	Portrait

ISO
200
400
800
1600

APERTURE
f/2.8
f/4
f/5.6
f/8
f/11
f/16
f/22

SHUTTER
30"
8"
2"
0.5"
1/30
1/60
1/125
1/250
1/500
1/1000
1/2000

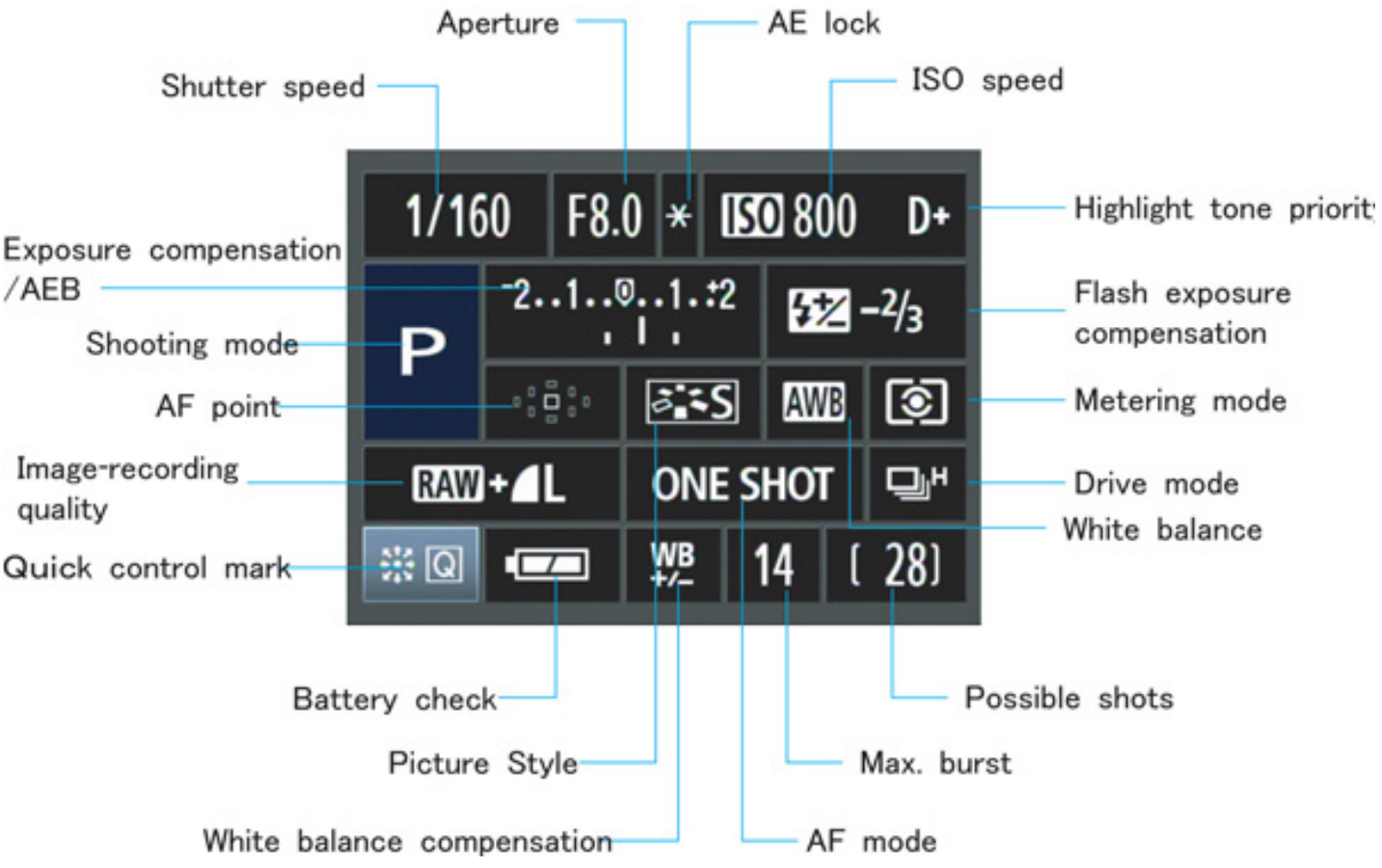
WHITE BALANCE	
AWB	Auto
	Daylight
	Shade
	Cloudy
	Flash
	Fluorescent
	Tungsten
	Custom

METERING	
	Matrix/Evaluative
	Center-Weighted
	Partial
	Spot

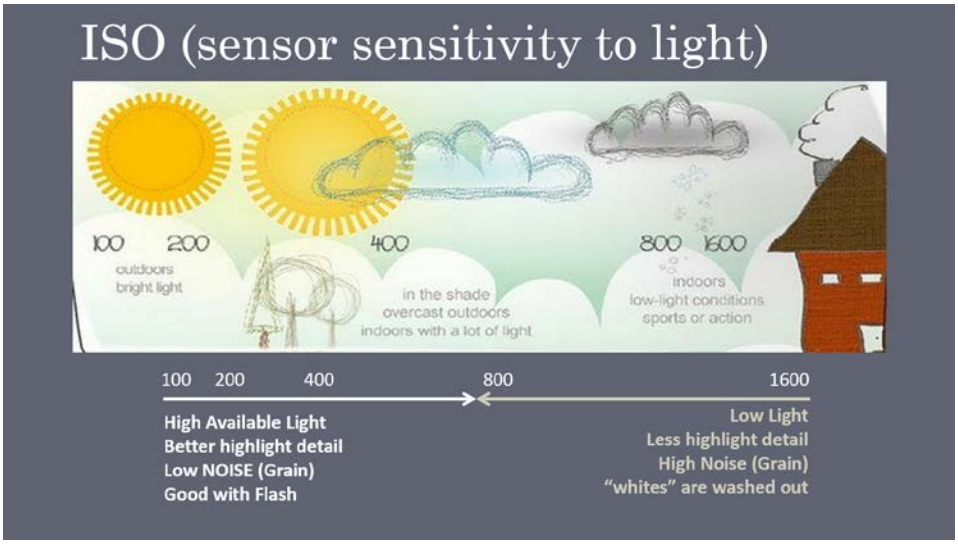
AF-POINTS	
Canon	**Nikon**
Single Point	
Zone Select	
Fully Auto	

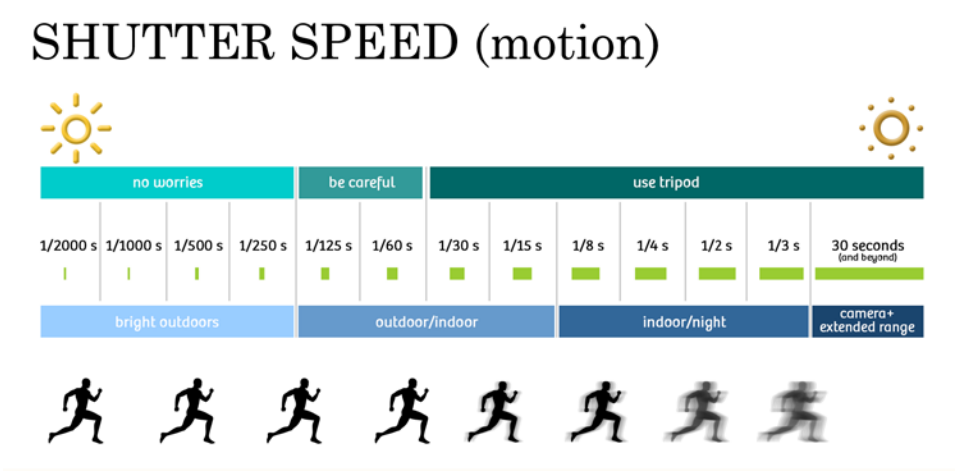
DRIVE MODES	
	Single
L	Continuous (Low)
H	Continuous (High)
2	Self-Timer (2)
10	Self-Timer (10)

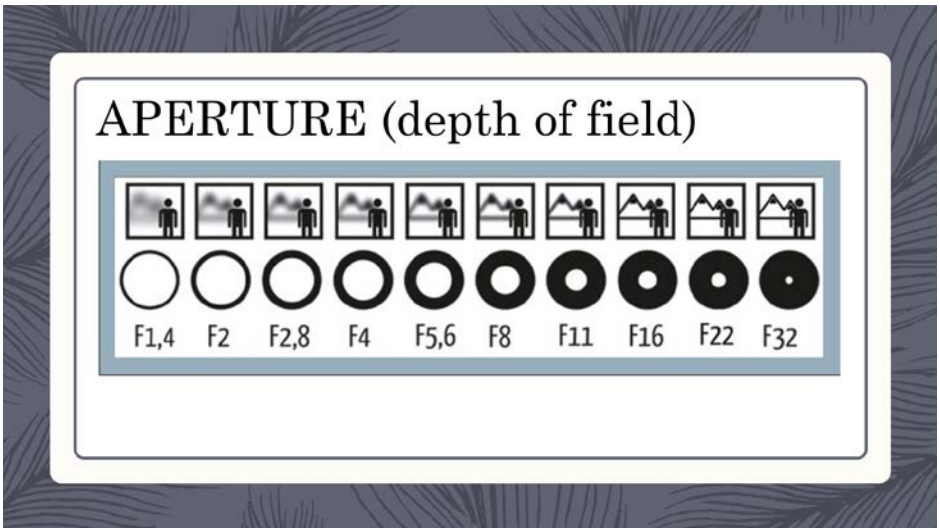
FOCUS MODE	
Canon	**Nikon**
One Shot	**Single Area (AF-S)**
AI-Focus	**Automatic (AF-A)**
AI-Servo	**Continuous (AF-C)**
Manual	**Manual**

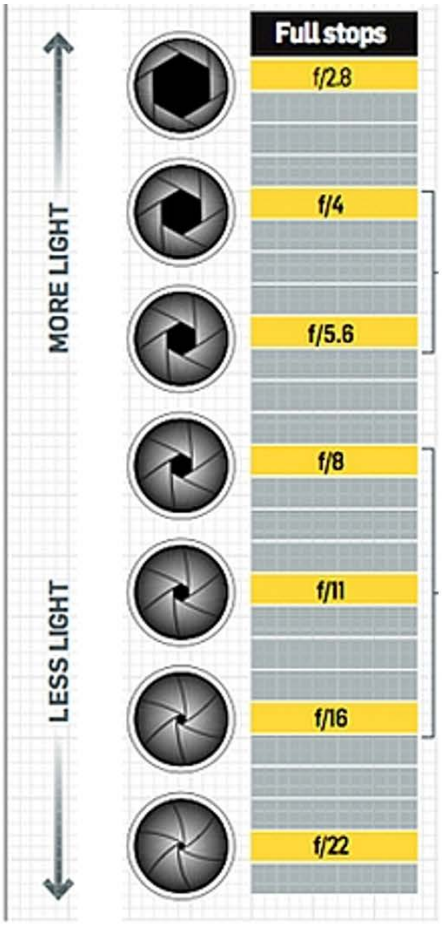


EXPOSURE CHARTS









Wide apertures
The widest apertures have f-stops with the smallest numbers. The maximum aperture available depends on the lens you're using. On many zoom lenses, for example, the maximum aperture gets smaller as you zoom in.

Medium apertures
The middle apertures on your lens tend to give you the best-quality images. However, they might not give you the amount of depth of field you require. Think of it as a balancing act, with some compromise required.

Small apertures
Most lenses have a minimum aperture of f/22, although some stop at f/16 while others go down to f/32. As aperture gets smaller, depth of field increases. Ultimately, though, the image resolution deteriorates due to diffraction. See page 76 for more on this.

Exposure Cheat Sheet

MORE LIGHT

LESS LIGHT

ISO

3200 1600 800 400 200 100 50

Dark room/nighttime
Noisier, lower-quality picture

Daylight
Higher-quality picture

APERTURE (in f/stops)

f/1.8 f/2.8 f/4 f/5.6 f/8 f/11 f/16 f/22

Wide open
Shallower depth-of-field

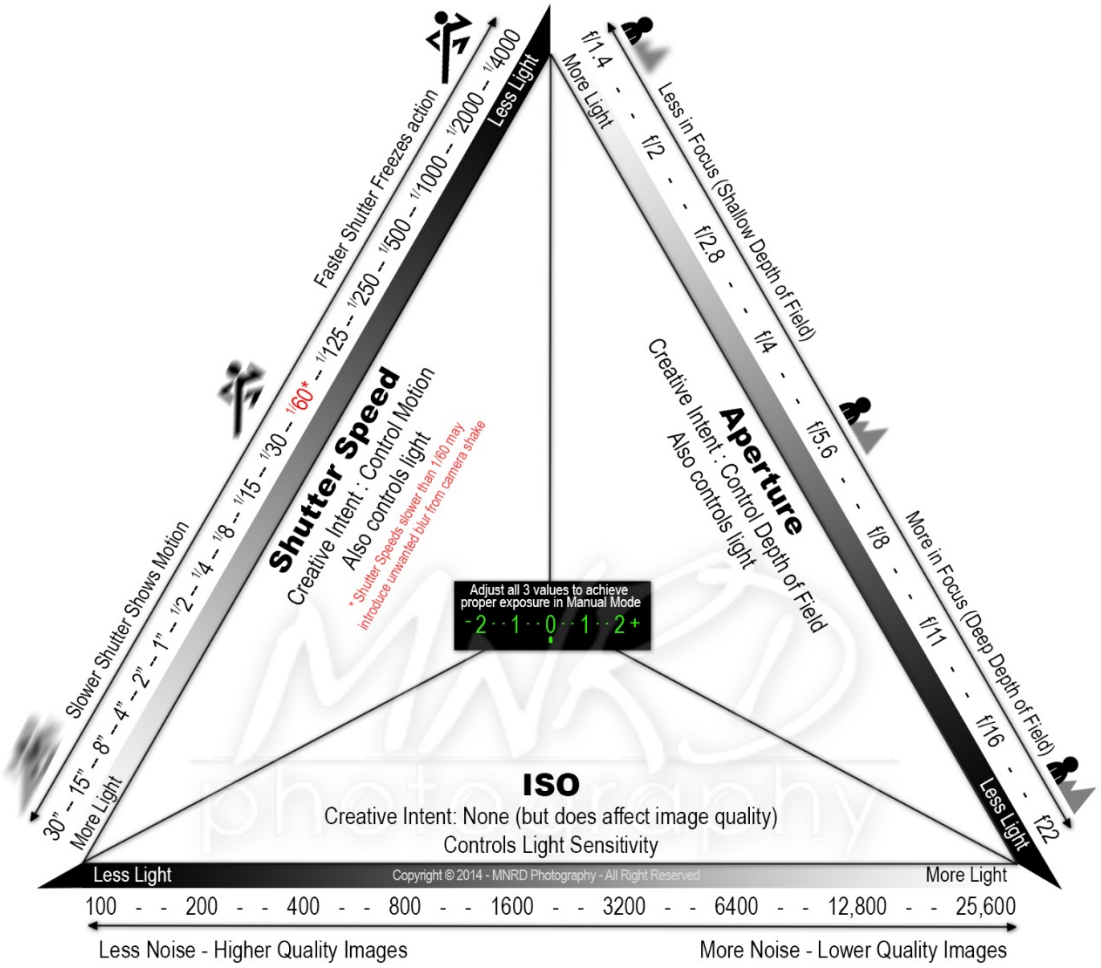
Stopped down
Deeper depth-of-field

SHUTTER SPEED (in seconds)

2" 1" 1/10 1/25 1/60 1/250 1/500 1/1000

Slower shutter
More motion blur

Faster shutter
Less motion blur


Faster Shutter Freezes action
Slower Shutter Shows Motion
30" – 15" – 8" – 4" – 2" – 1" – 1/2 – 1/4 – 1/8 – 1/15 – 1/30 – 1/60* – 1/125 – 1/250 – 1/500 – 1/1000 – 1/2000 – 1/4000
More Light
Less Light
Shutter Speed
Creative Intent : Control Motion
Also controls light
* Shutter Speeds slower than 1/60 may introduce unwanted blur from camera shake
f/1.4 - - f/2 - - f/2.8 - - f/4 - - f/5.6 - - f/8 - - f/11 - - f/16 - - f22
More Light
Less Light
Less in Focus (Shallow Depth of Field)
More in Focus (Deep Depth of Field)
Aperture
Creative Intent : Control Depth of Field
Also controls light
Adjust all 3 values to achieve proper exposure in Manual Mode
-2 · · 1 · · 0 · · 1 · · 2+
ISO
Creative Intent: None (but does affect image quality)
Controls Light Sensitivity
Less Light
More Light
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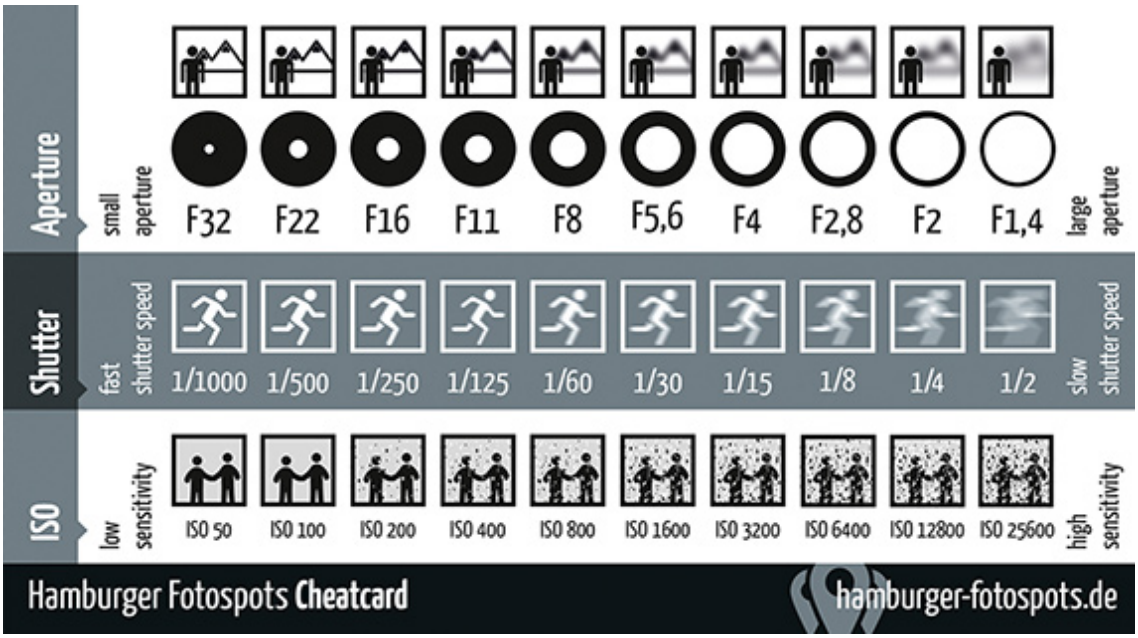
100 - - 200 - - 400 - - 800 - - 1600 - - 3200 - - 6400 - - 12,800 - - 25,600
Less Noise - Higher Quality Images
More Noise - Lower Quality Images


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
Hamburger Fotospots Cheatcard
hamburger-fotospots.de

exposure

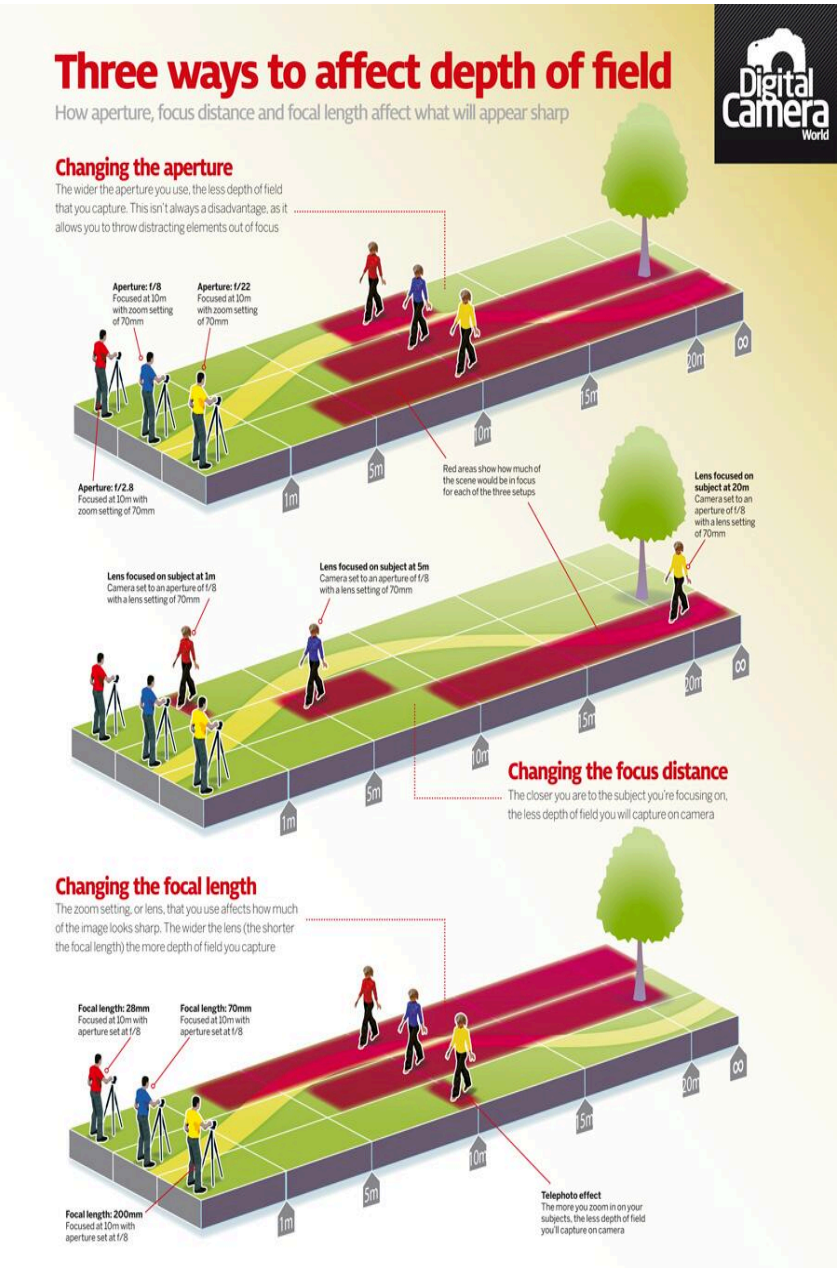
Under **Correct** Over

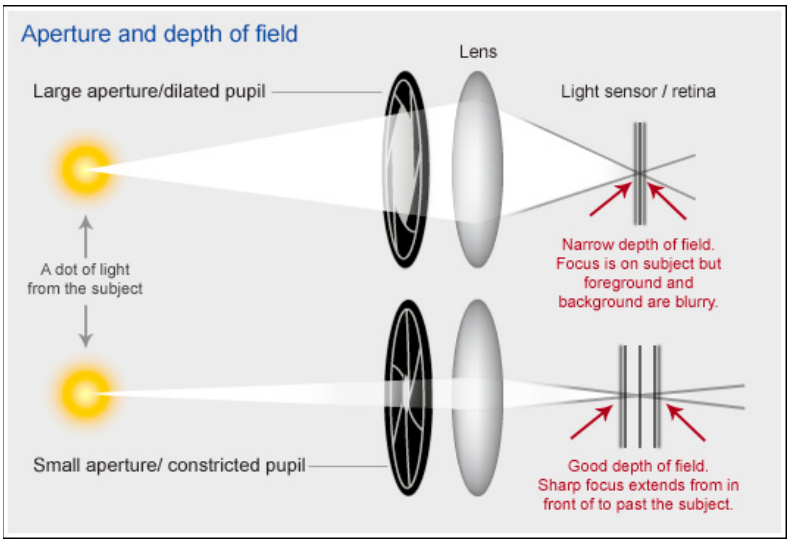
"Not Enough Light"

Exposure is a comparison of how the camera settings (*Aperture, Shutter, ISO*) will reproduce the image as compared to available light of the scene being photographed. Exposure scales (expressed as stops) range from –2 to +2.

"Too Much Light"

stops samples

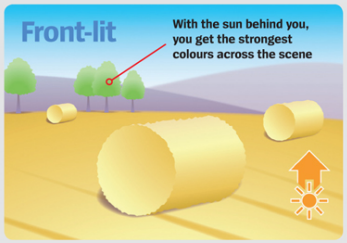




APERTURE & DOF

THE SIZE OF THE LENS IRIS OPENING (APERTURE) AFFECTS THE ANGLE AT WHICH LIGHT IS REFLECTED ONTO THE IMAGE SENSOR. WIDE APERTURES ALLOW SHARP ANGLES WHICH REDUCE DOF.

Where's the sun? Directional light explained

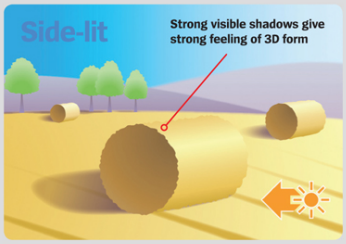


The sun behind you

Frontal lighting creates the most even illumination across the scene. Shadows are hidden, so form and texture can be hard to make out – but colours in the sky and in the scene itself are usually at their most vibrant.

Shooting into the sun

Backlighting throws the surface of much of the scene into shadow. Expose for the brightest part of the scene and you get a silhouette. Crop in and expose for the shadows and you get a softly lit image.

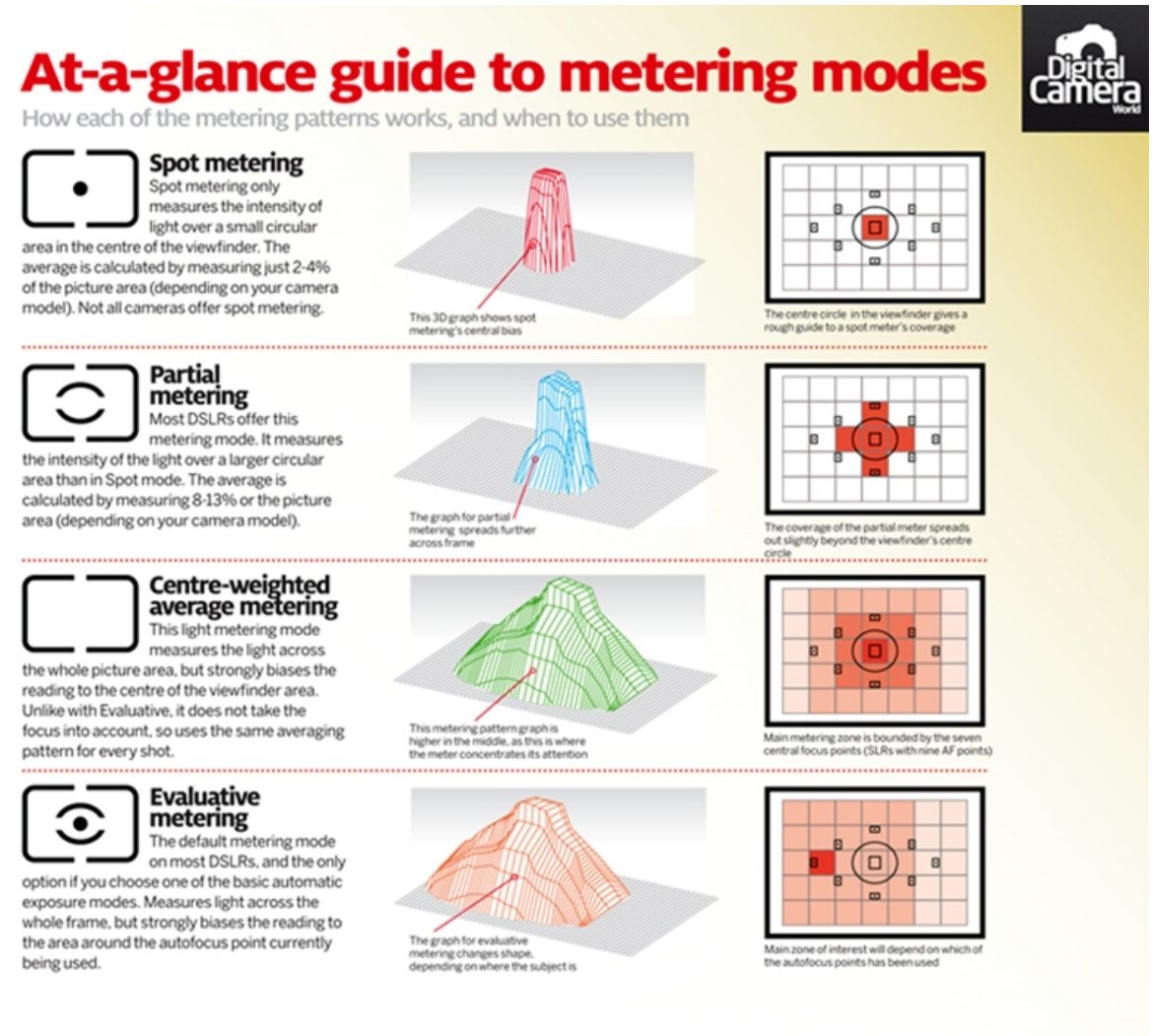


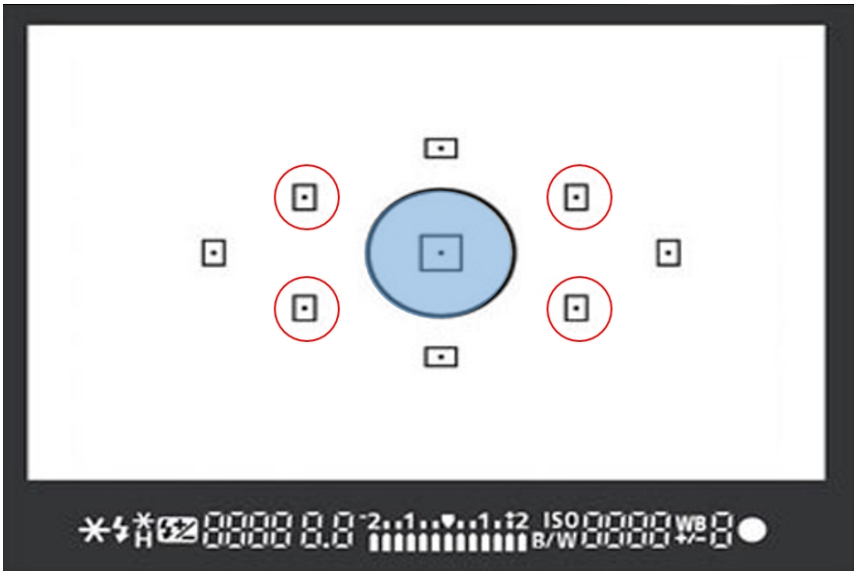
With the sun to the side

Side-lighting creates dramatic results, illuminating some surfaces and throwing others into shadow. It is great for revealing texture and form in the landscape – and provides strong colour in the best lit areas.

SYMBOL	WB SETTING	CAMERA RESPONSE
AWB	Auto	Camera will generally select most intense light source and will predict besT setting
	Daylight	Based on temperature of light at noon not passing through clouds. Camera generally adds warm tones
	Shade	Camera typically produces images too blue, and AWB usually does not work well in shade. Camera will add warm tones
	Cloudy	Under cloudy conditions cameras can sometimes add too much blue in the image. This is balanced by the camera adding warm tones.
	Flash	Flash is close in color temperature to daylight. As such, this setting tends to add warm tones.
	Fluorescent	In some fluorescent lighting the image can appear too green. Camera adds reds to balance
	Tungsten	Also for incandescent, the camera predicts excessive warm tones, therefore adds blues to cool down image
	Custom	Based on user guide procedure helps to capture accurate colors by telling the camera exactly what white is in the lighting situation

METERING





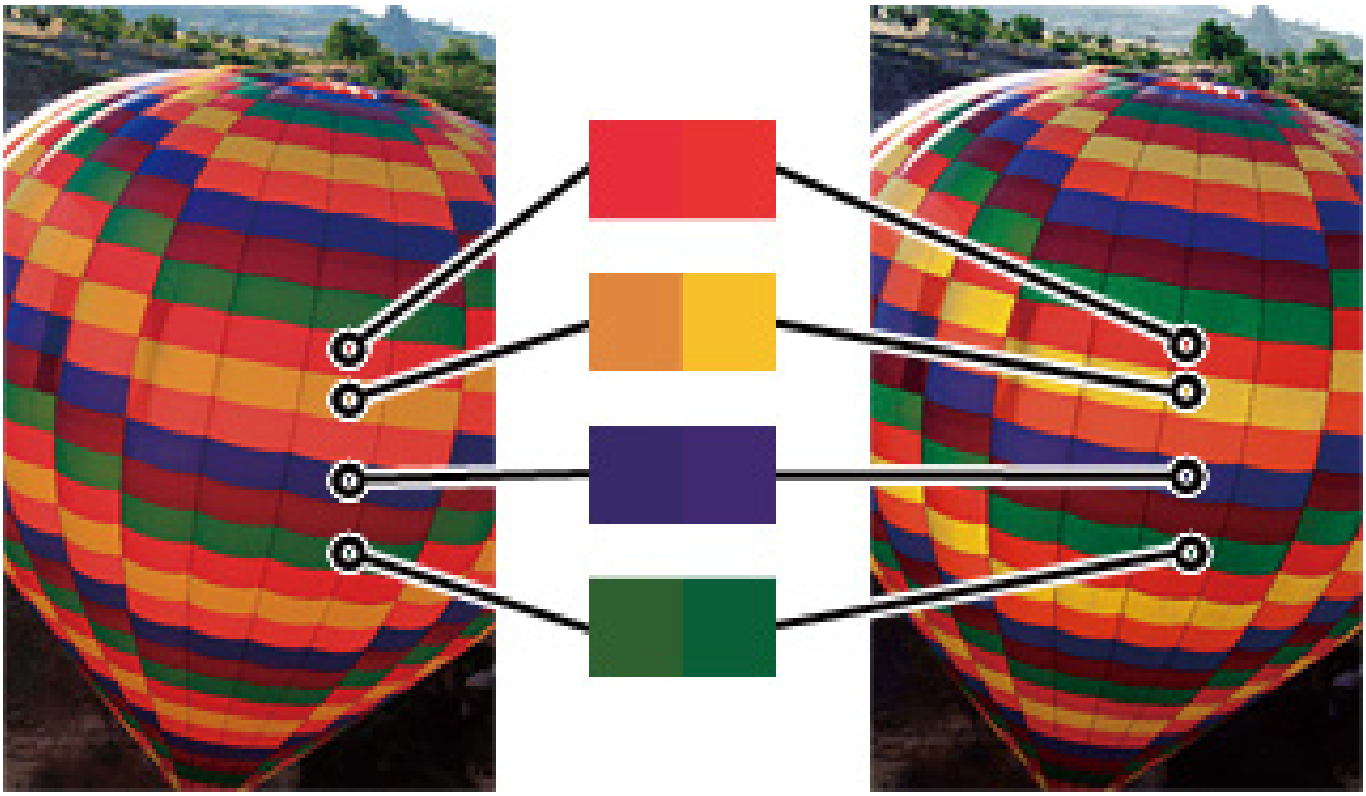
Focus point-selection allows the user to select a point/area that instructs the camera what object to focus on. This overrides the camera's default auto-focus mode.

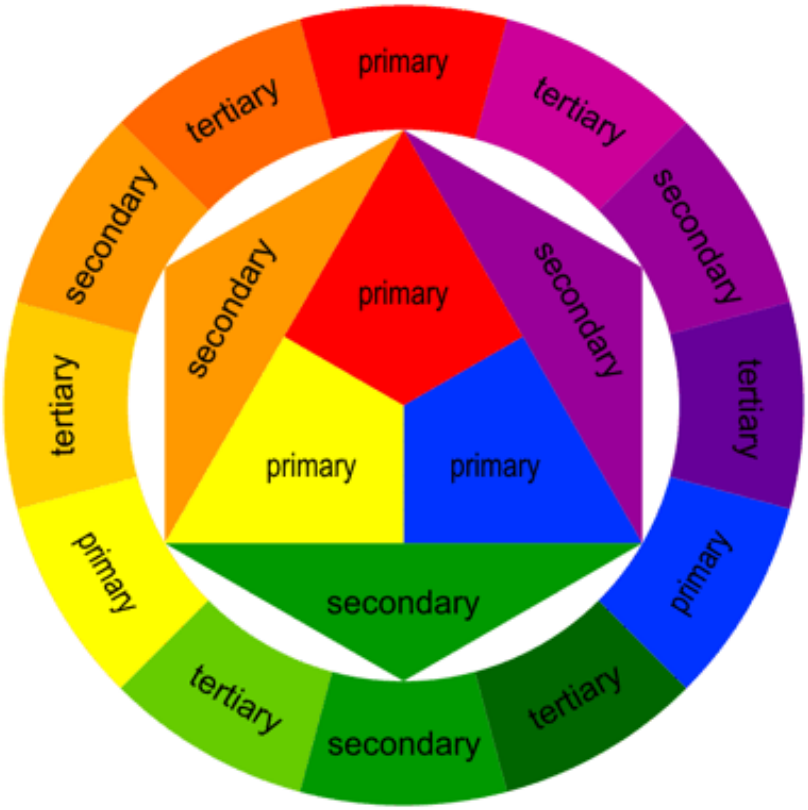
With regard to light metering; the Auto-Focus point/area selected becomes the point/area the camera uses to meter light of the scene when using Spot & Partial metering modes. (Evaluative still measures the entire scene)

COLOR


SHOOTING MENU
JPEG compression
NEF (RAW) recording
White balance
AUTO
Set Picture Control
SD
Manage Picture Control
--
Color space
sRGB
Active D-Lighting
OFF
Long exp. NR
OFF


Picture Style
Standard 3,0,0,0
Portrait 2,0,0,0
Landscape 4,0,0,0
Neutral 0,0,0,0
Faithful 0,0,0,0
Monochrome 3,0,R,N
INFO. Detail set.
SET OK





COLOR CAN BE USED TO EMPHASIZE YOUR SUBJECT BY WITHER SELECTING CONTRASTING OR COMPLIMENTARY COLOR SCHEMES.

TO **CONTRAST**, PICK A PRIMARY OR SECONDARY COLOR, THEN CHOOSE A COLOR (OR TWO COLORS) DIRECTLY OPPOSITE THE PRIMARY COLOR OF YOUR SUBJECT.

TO **COMPLEMENT**, TAKE A PRIMARY COLOR, AND PICK ONE (OR TWO) OF THE SECONDARY, OR TERTIARY COLORS TO EITHER SIDE OF THE PRIMARY.

Roger Schroeder

photagape@gmail.com

http://photomcs.wordpress.com (class resource)