Beginner Hands-on Session 4
Choosing Camera Settings

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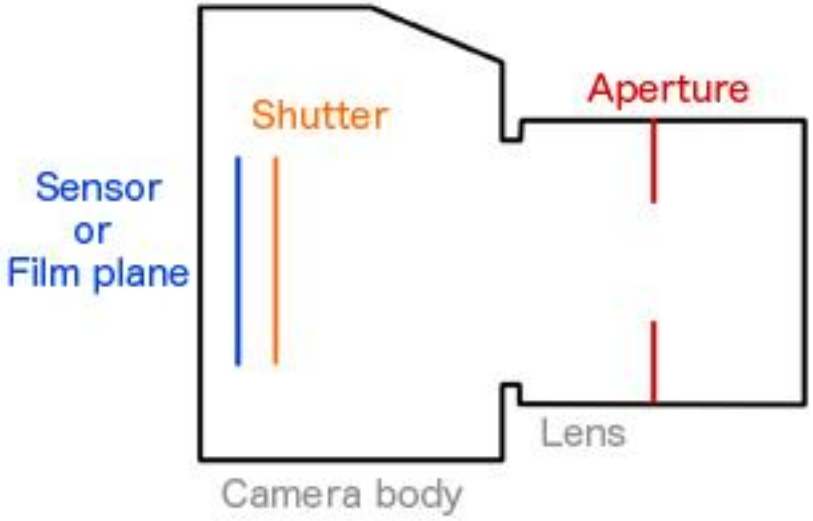
Exposure

- Exposure value (EV) describes brightness of scene.
- Exposure is how much light the camera's sensor collects.
- Camera exposure controlled by shutter speed, aperture and ISO
  - Shutter speed determines time the shutter is open
  - Aperture control how much light is traveling through the lens (f-stop)
  - ISO determines sensor sensitivity to light



Shutter Speed

- High speed stops subject motion
- High speed reduces blur due to camera shake
- Low speed can motion blur
- Low speed requires support (tripod)

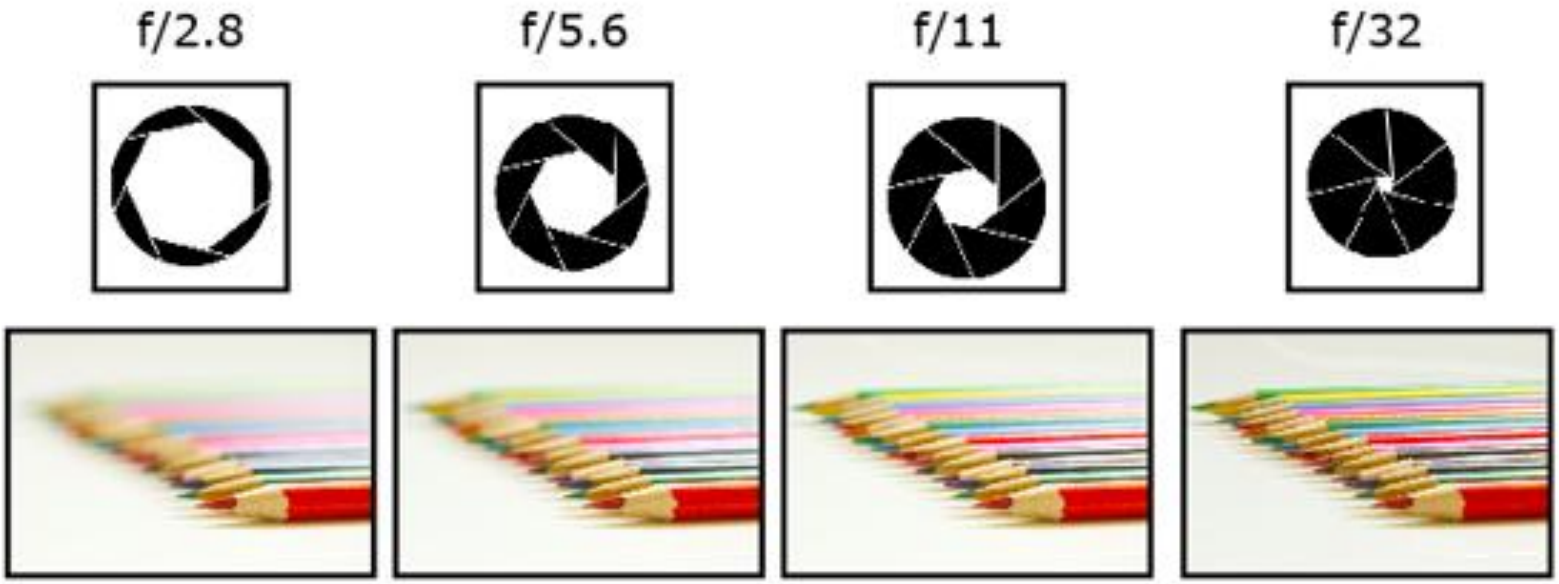
f/2.8
1/125 Second

f/10
1/10 Second

f/22
1/2 Second

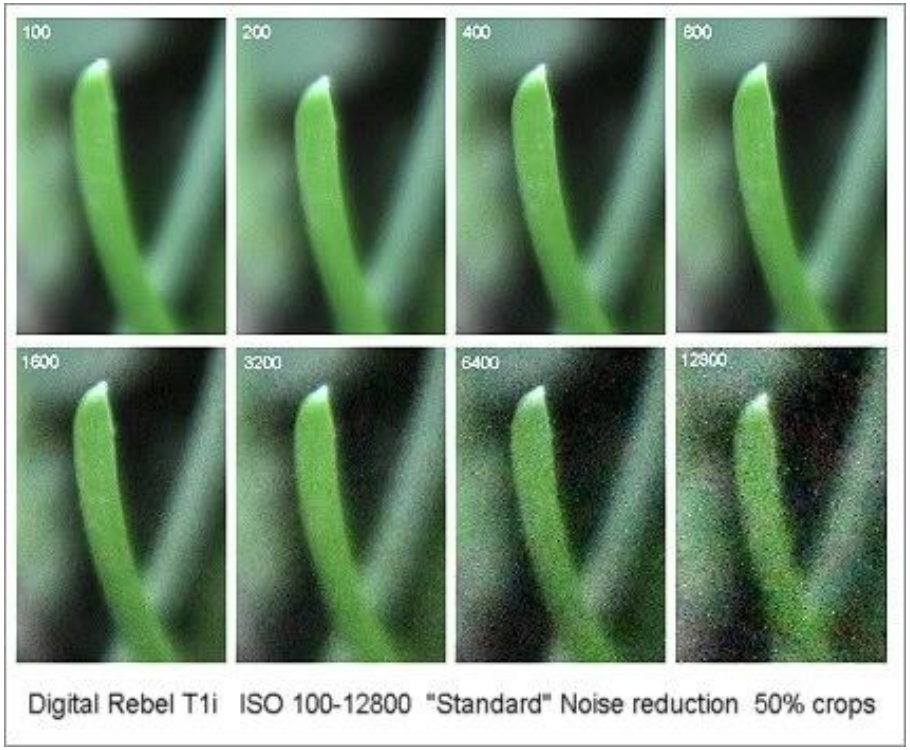
Aperture or f-stop

- Defines how large the lens opening is that lets in light
- Determines depth of field
  - Is everything sharp
  - Or only part of image is sharp



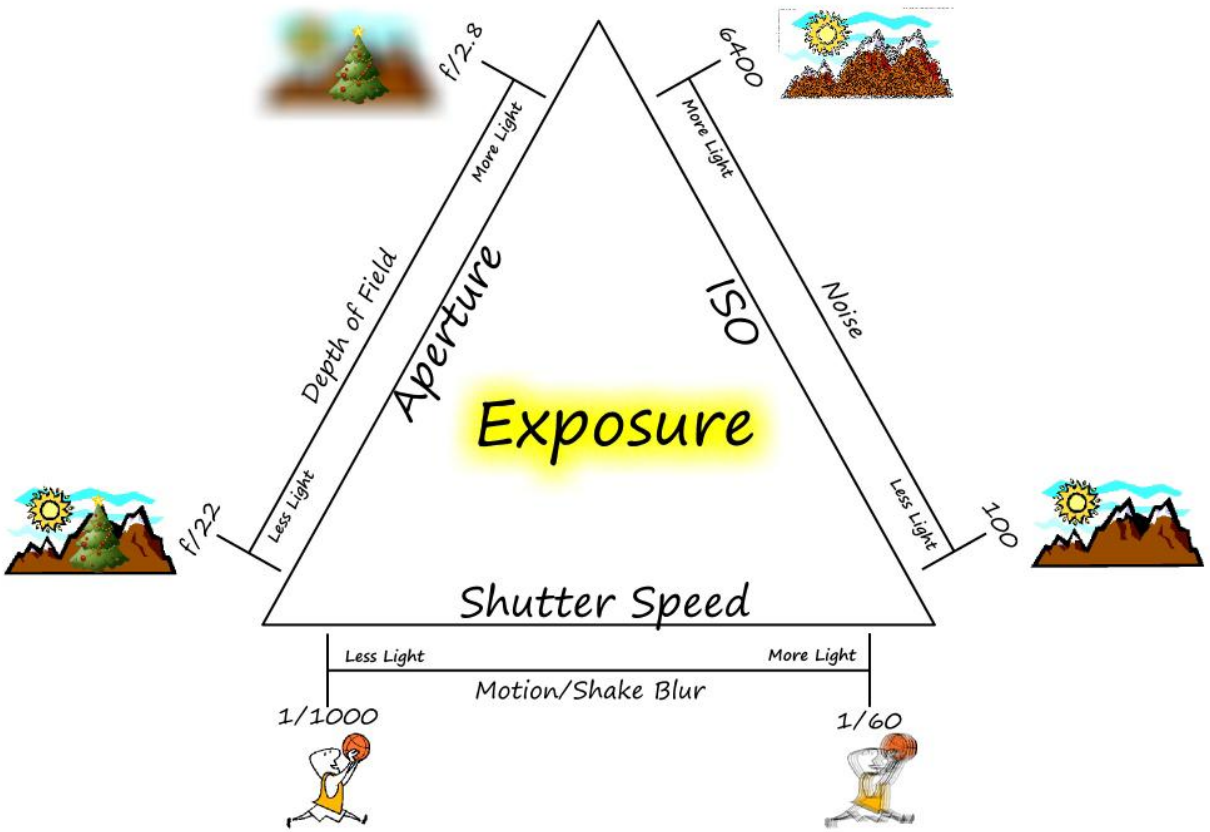
ISO – Light Sensitivity

- Low ISO
  - Lower sensitivity to light
  - Lower noise
- High ISO
  - More sensitive to light
  - Higher noise (think distortion when turnup the volume)



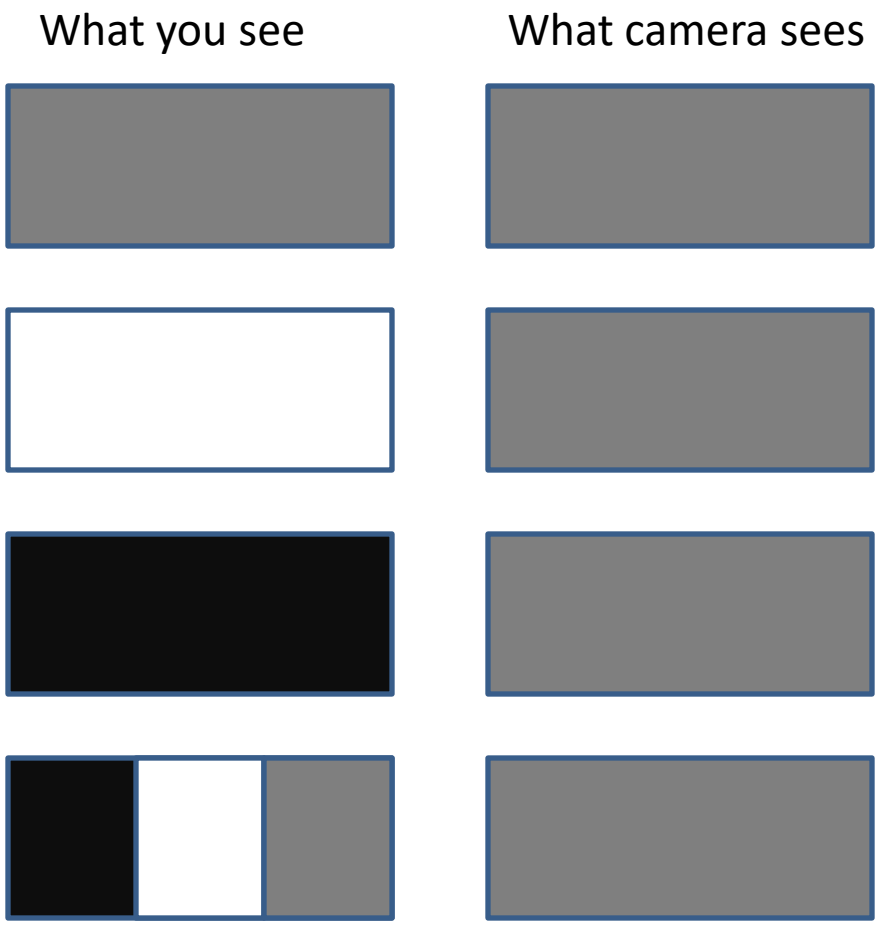
Setting Exposure

- Exposure is determined by shutter speed, aperture and ISO
- If change one parameter, must change others to maintain same exposure – Exposure Triangle
- Smart Auto modes choose settings based on algorithm
- Program and Scene modes also do by may offer some control
- Photographer take control in aperture priority, shutter priority and manual modes



Camera Exposure Meter

- Camera averages brightness and assumes its neutral gray

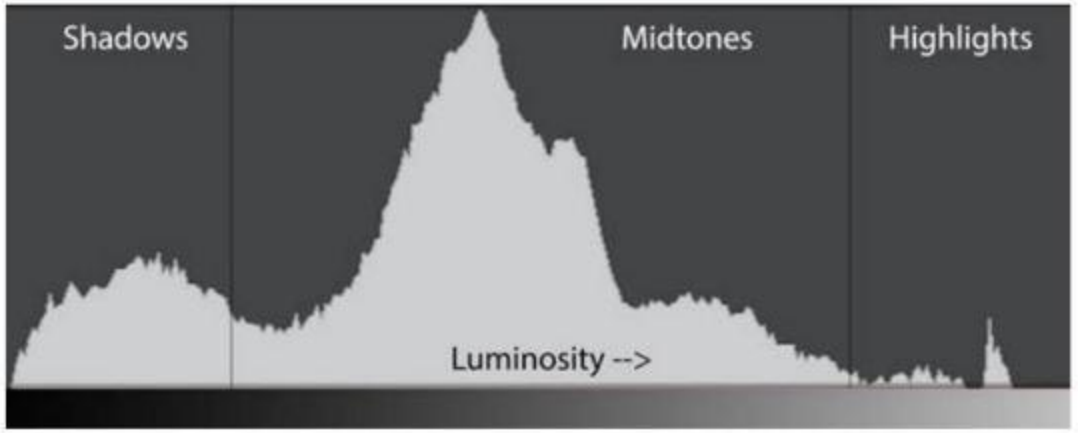


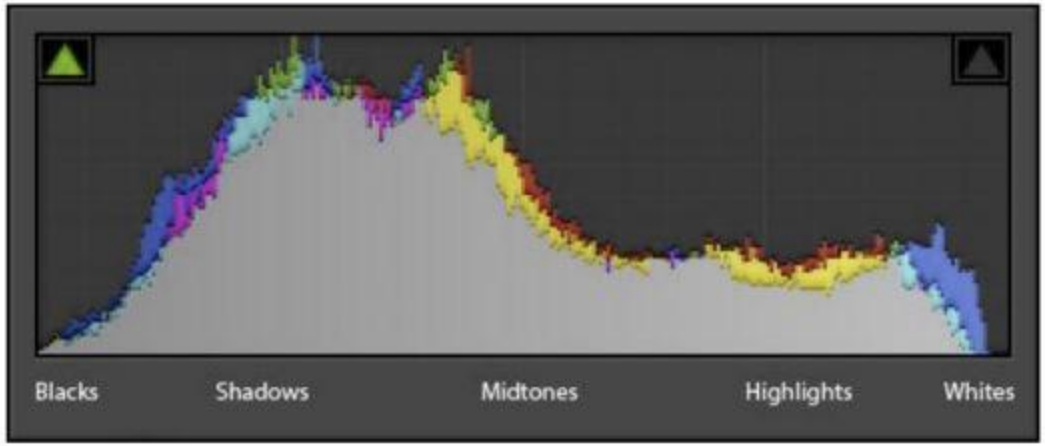
Correct Exposure

- Camera use average luminosity of the scene to obtain exposure
- Underexposed - shadows are blocked up (no detail)
- Overexposed - highlights are blown out (no information)

Histogram
(Your Best Friend)

- Graph shows number of pixels at each luminosity value
- Black and shadows are to left
- White and highlights are to right
- You are primarily looking at end points and not trying to use shape of histogram
- Histogram is available in camera
  - Based on color space chosen
  - Mirrorless when setting up shot
  - DSLR after shot in playback
- Histogram is also available in Lightroom and Photoshop

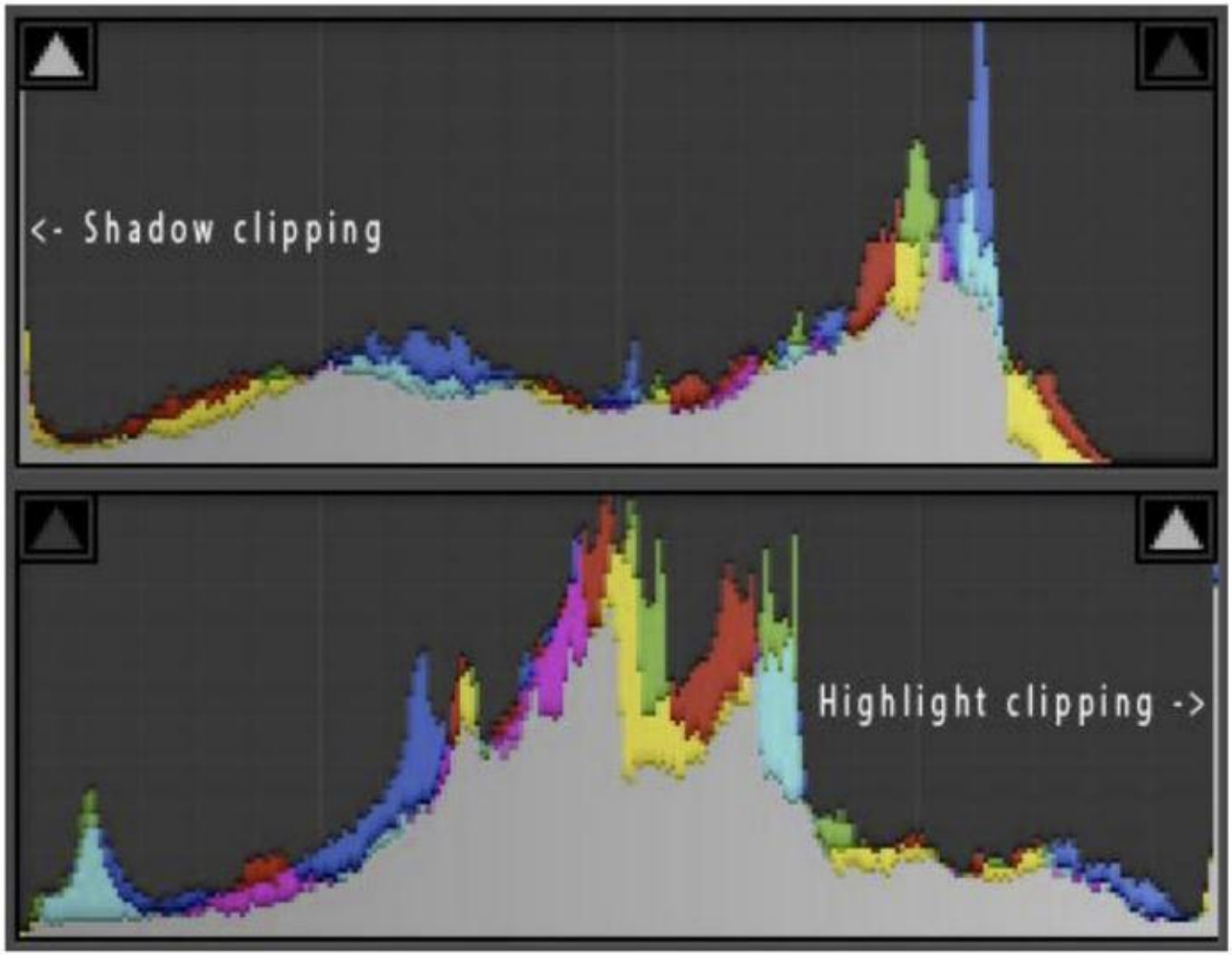




Exposure Problems

Blocked up shadows

No detail in shadows

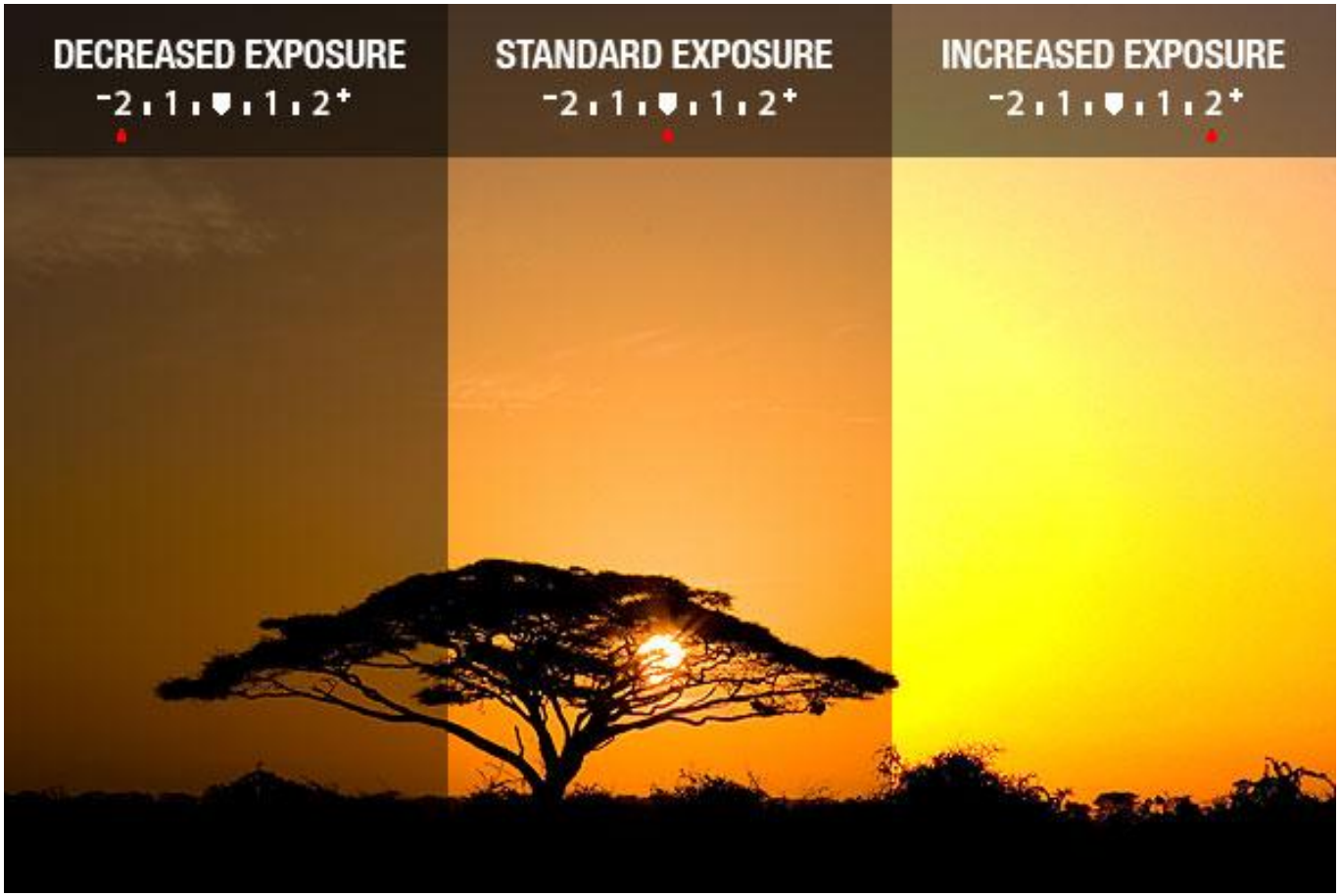


Blownout highlights

No detail in highlights

Exposure Compensation

Use exposure compensation to override camera exposure
Too dark or light
To eliminate shadow or highlight clipping



Setting Up Your Camera
For Some Common Situations

- Landscape or cityscape
- Portrait
- Still life
- Interior
- Birds and wildlife
- Mesquite Rodeo
- Waterfalls, running water and surf
- Night scene
- Star trails or milky way

In Summary

- Looking for optimum settings for each different image
  - Exposure, DOF, stop or blur action, low noise…

- Controls that you have in camera
  - Shutter Speed – Stop or blur motion
  - Aperture - DOF
  - Focus - select focus area
  - ISO - Light sensitivity and noise
  - Exposure compensation and AEB
  - Change area that camera uses to meter light
  - Flash – Turn on or off

  - Scenes – Each mode sets up cameras differently
    - Landscape – small aperture, low ISO, increased contrast
    - Portrait – large aperture, low ISO, reduced contrast
    - Night Shot – slow shutter (adjustable),high ISO
    - Close Up – macro (flower), small aperture, use tripod
    - Backlight – adjusts contrast to lighten subject
    - Beach and Snow – decreased exposure compensation