

# Exposure in Photography

- \*5 Steps to Shooting Checklist
    - \* Exposure
      - \* ISO
      - \* Aperture
    - \* Shutter Speed
-

- Have you charged your batteries?
  - You don't want to go out with a dead camera!
- Have you formatted your memory card?
  - You don't want to get any error messages!
- Have you checked your ISO setting?
  - Are you going outside (lower ISO) or inside (higher ISO)?
- Have you selected the right file type?
  - Jpg? Raw?
- Have you chosen the correct white balance?
  - Cloudy? Sunny? Fluorescent lights? Incandescent lights? Etc.

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- Definition: The quantity of light that hits the sensor/film
- What effects exposure?
  - ISO (the sensitivity of the sensor to light)
  - Aperture (the size of the opening of the lens)
  - Shutter Speed (how fast the shutter opens and closes)
- It can be measured in your camera pretty accurately
- A good exposure will make the difference between a good and bad photo

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## MANUAL PHOTOGRAPHY

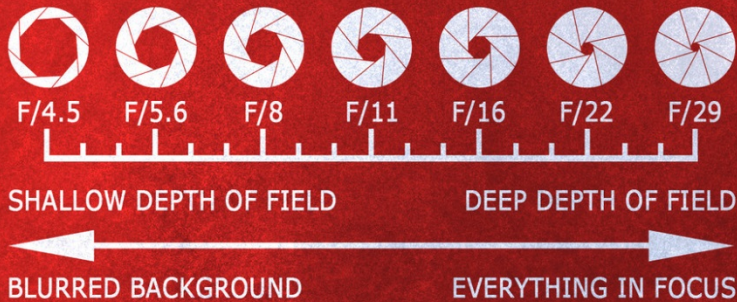
### EXPOSURE



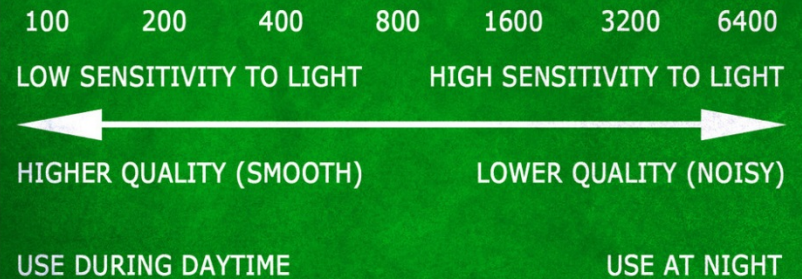
### SHUTTER SPEED



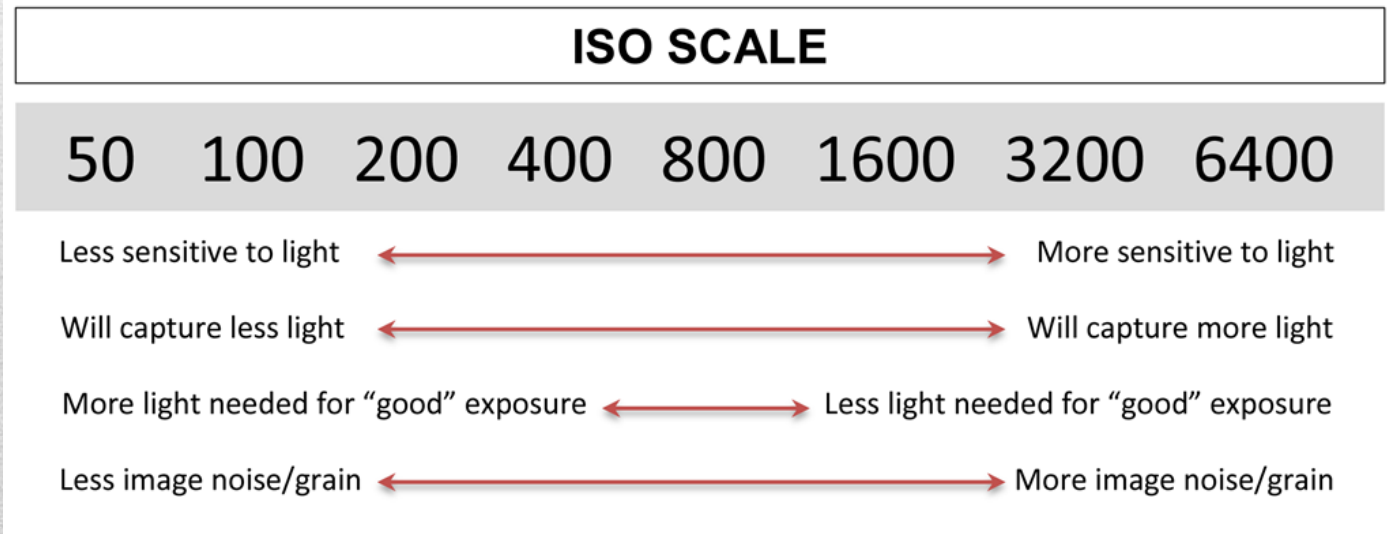
### APERTURE



### ISO

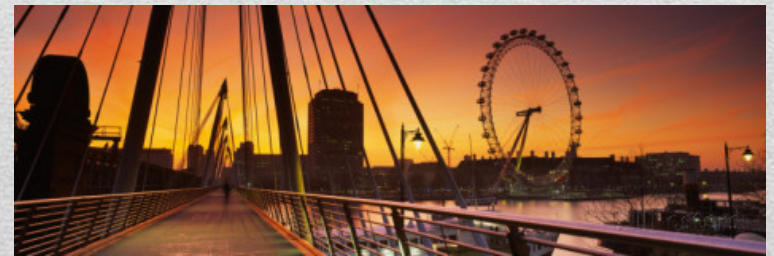
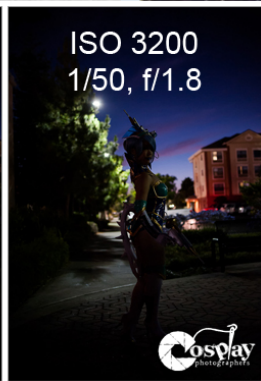
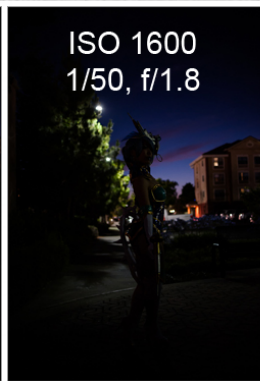
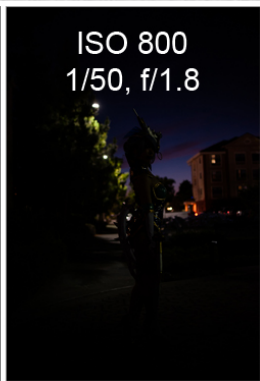
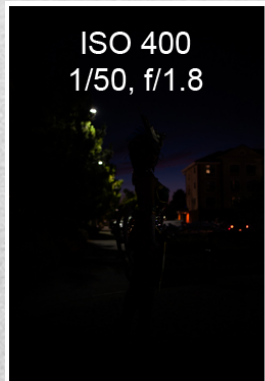
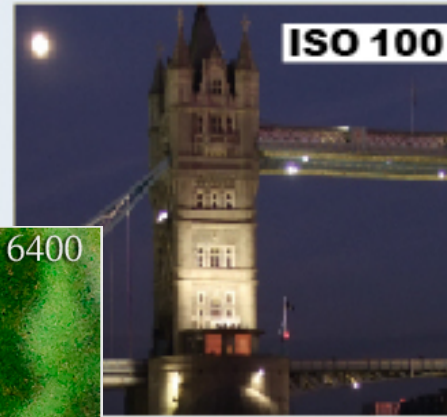


- Definition: the sensitivity of the camera's sensor to light
- Higher values are more sensitive to light(1600/3200)
  - Lets you take pictures in low light situations
  - Have more “noise/grain” that shows up in magnification
- Larger sensors have less “noise”
- Lower values are less sensitive to light (100/200)
  - Lets you take pictures in bright light situations

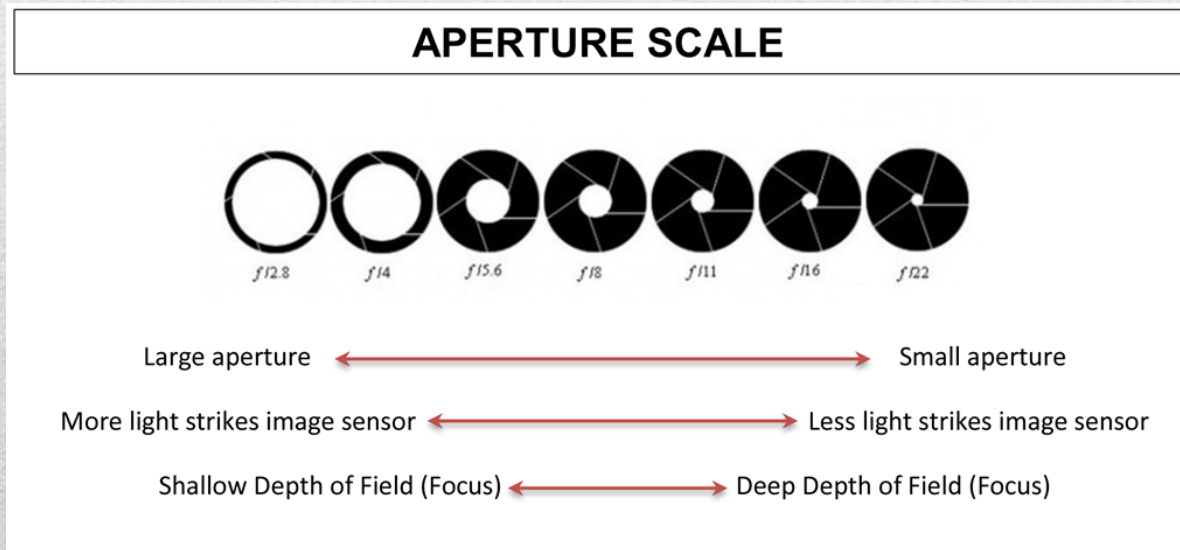


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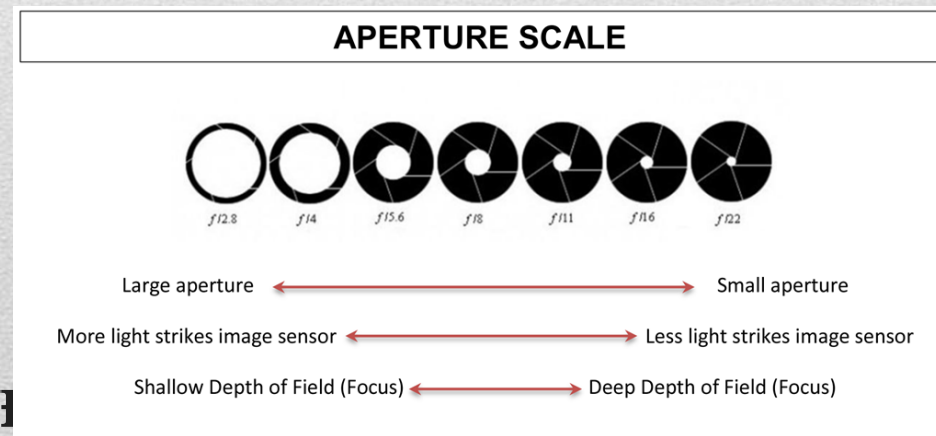


- Definition: The size of the opening of the lens
- Open up to let in more light and close (stop down) to let in less light
- Each whole f-stop increases by halves, and decreases by doubles, the amount of light
- Aperture is a major controller of DOF



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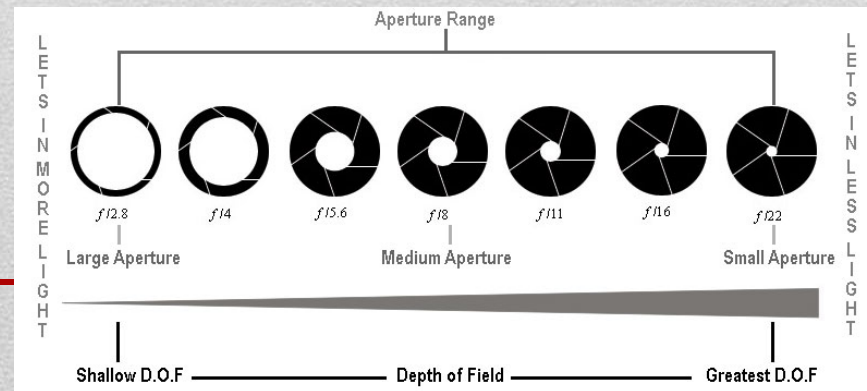
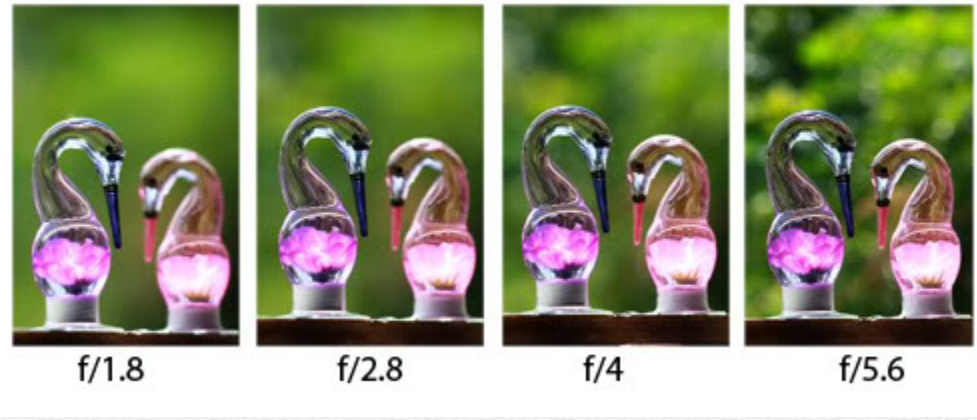
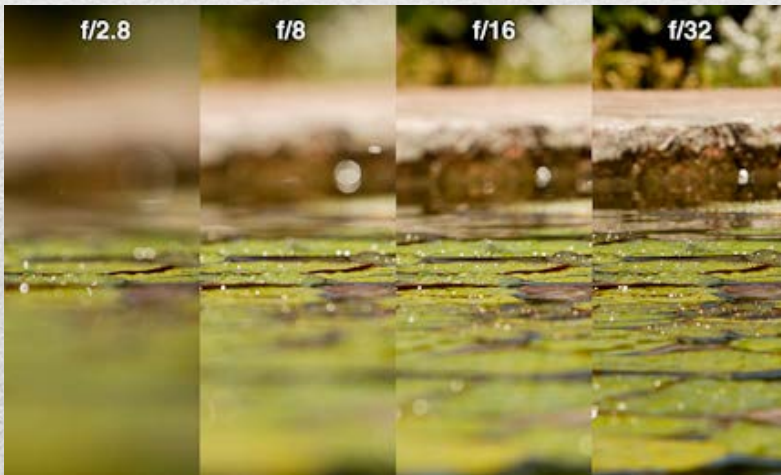
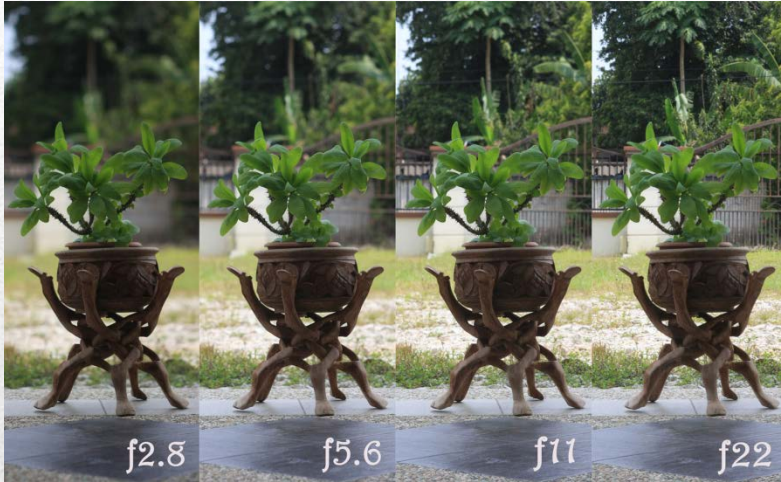
- Big Aperture (small#) (f/1.4 \* f/2 \* f/2.8)
  - Use for low light
  - Use for shallow DOF (blurring background)
  - Can use a faster shutter speed
- Small Aperture (big#) (f/32 \* f/16 \* f/11)
  - Use in bright light situations
  - Use for deep DOF (long distance clear)
  - Need a longer shutter speed (can use panning)



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- Definition: How long the shutter stays open
- It's measured in seconds and fractions of a second
- It is 1 factor in determining how much light will enter the photo
  - $1/125^{\text{th}}$  is HALF the light of  $1/60^{\text{th}}$
  - A faster shutter speed lets in less light, making it darker
  - A slow shutter speed will let in more light, brightening the photo
- Effects motion and blur in your photography
  - Fast shutter speeds can freeze action
  - Slow shutter speeds cause blur
  - To avoid blur with zoom lenses... your shutter speed should be greater than the focal length of the lens
    - (300mm zoom= $1/300^{\text{th}}$  (or more) shutter speed)

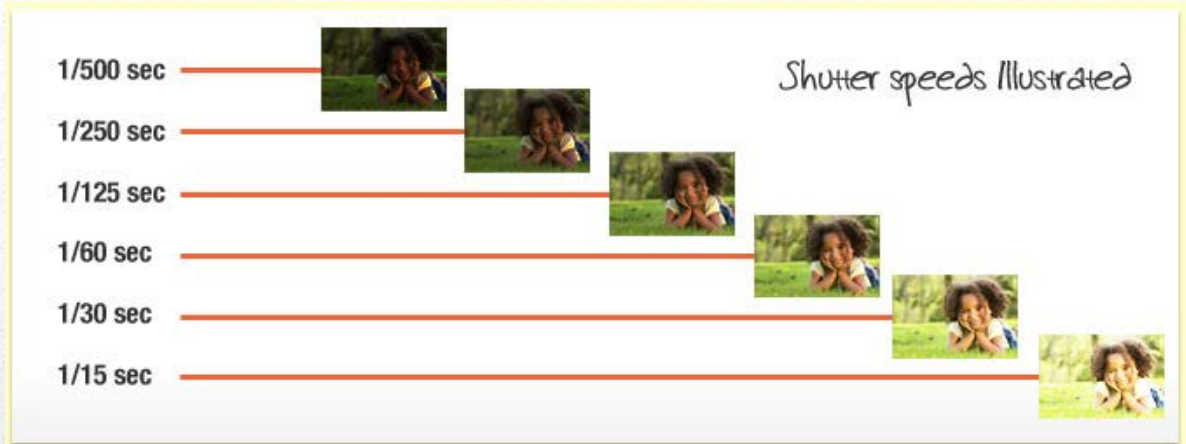
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## DIRECTION OF A MOVING OBJECT AFFECTS THE AMOUNT OF BLUR

1/30 second



When a subject is traveling parallel to the plane of the film or sensor, considerable movement is likely to be recorded on the film. The subject will be blurred, unless the shutter speed is fast.



1/500 second



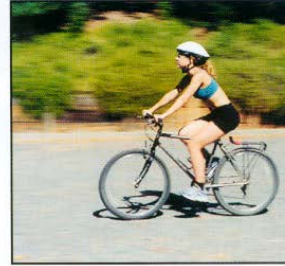
1/30 second



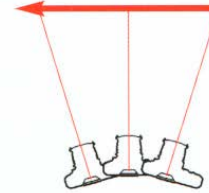
If the subject is moving directly toward or away from the camera, no sideways movement is recorded so a minimum of blur is produced, even at a relatively slow shutter speed.



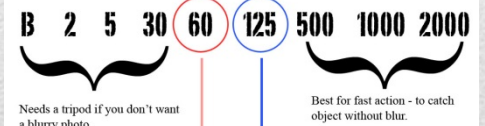
1/30 second, camera panned



During panning, the camera is moved in the same direction as the subject. The result is a sharp subject and a blurred background.



## SHUTTER SPEED



Needs a tripod if you don't want a blurry photo.

Lowest shutter for objects.

Lowest shutter for people.

Best for fast action - to catch object without blur.



**B = BULB**, Shutter will open as long as you hold it. It could be 4 seconds or 10 minutes.