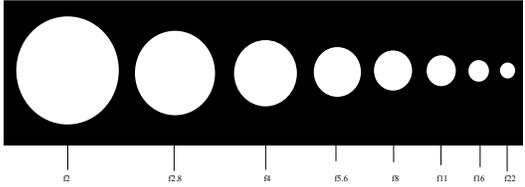


The good, the bad and the ugly

Shutter speeds, f-stops and ISO

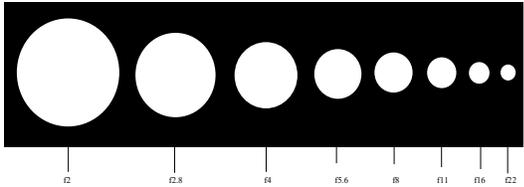
F-stops or apertures

- The amount of light that is allowed in to your film/sensor via the opening of the lens.



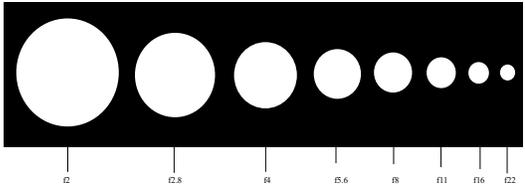
F-stops

- Larger the opening (f2.8) the more light is let in to the sensor



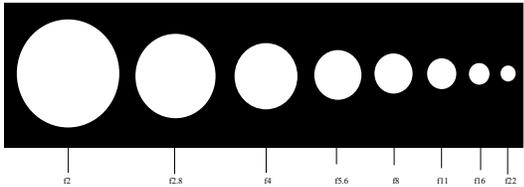
F-stops

- Larger the opening (f2.8) shallower the depth of field (blurriness of background)



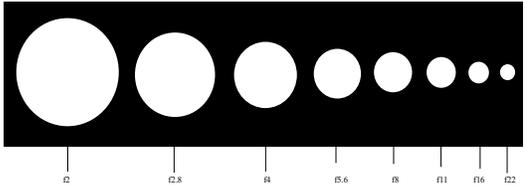
F-stops

- Larger the opening (f2) the smaller the number



F-stops

- Memorize f-stops easily
 - Every other stop is doubled
 - $2 \times 2 = 4$ $4 \times 2 = 8$ $8 \times 2 = 16$



F-stops

- Many photographers use an external light meter to help determine the proper exposure to use.
 - Many cameras have built-in light meters but they can be misleading



F-stops

- You can outsmart the camera if you're smart enough
- Internal light meters can be skewed by light or dark objects in your frame.
 - We'll discuss equivalent exposures soon
 - Altering the exposure on purpose for a desired effect

F-stops

- Use the aperture dial to adjust the f-stop on your camera
 - There are different pre-programmed modes. Choose M to make your own settings.



F-stops

- A-dep = auto depth of field
- M = manual
- AV = Aperture priority (you set f-stop it sets shutter for you)
- TV = shutter priority (you set shutter speed it sets aperture for you)
- P = program
- Green box = auto
- Face = portrait
- Mountain = landscape
- Flower = closeup
- Running man = action



Poor lighting

- Using the proper apertures and shutter speeds will make or break your photo





Good light

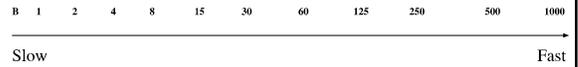
- You'll know it's right when it looks pretty
 - No awkward hues, tones, glares, etc.



The other part = shutter speeds

- How long the mirror and the shutter open allowing light to hit the digital sensor or film.
- To stop motion (people in the air for a split second) use a fast shutter speed
- To imply motion or have blurred lines use a slow shutter speed

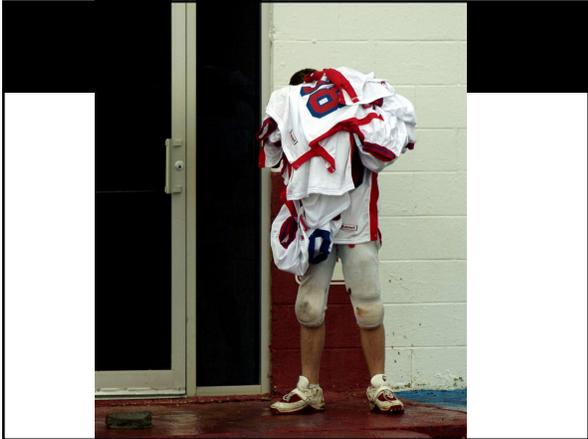
Standard Shutter Speeds



Exposure

- F-stops and shutter speeds work hand in hand to create the proper formula or EXPOSURE for a photo





ISO – Film speed

- The number given to film to identify it. You must set the camera ISO each time you put film in the camera. Many digital cameras will allow you to set the ISO.

ISO Speed

- 100
 - 200
 - 400
 - 800
 - 1600
 - 3200
 - 6400
- Smaller the number the better the film will do in brighter/lighter situations – a lot of light.
 - Higher the number the better the film will do in darker situations.
 - Same concept applies with digital expect no film.

White balance

- Process of removing unrealistic color casts
 - objects which appear white in person are rendered white in your photo.
 - Proper white balance takes into account the "color temperature" of a light source, which refers to the relative warmth or coolness of white light.
 - Our eyes are very good at judging what is white under different light sources, but digital cameras often have great difficulty with auto white balance (AWB) — and can create unsightly blue, orange, or even green color casts.

• <http://www.cambridgeincolour.com/tutorials/white-balance.htm>

White balance



White balance

- Different types of light give off different casts with different values
 - The higher the kelvin value the warmer (prettier or nicer) the photo will look
 - Sunset is higher than noon
- Set your camera properly. Avoid auto white balance

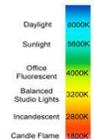


THE KELVIN SCALE

• MEASURES THE TEMPERATURE OF LIGHT AND PROVIDES A NUMERICAL VALUE FOR EACH COLOR.

• SHORTER WAVELENGTHS HAVE A LOWER TEMPERATURE

• LONGER WAVELENGTHS HAVE A HIGHER TEMPERATURE



The big puzzle

- Apertures, shutter speeds, ISO and white balance work together
 - They are all needed to make a good exposure
 - If the picture is dark you may have to increase ISO, decrease shutter speed or open up f-stop or maybe all three. They aren't independent.

I don't have an SLR camera ...

- Many point and shoot cameras will allow for some manual settings. Use as many as you can.
- If your camera has only an "on switch" you'll know now what to look for the next time you purchase a camera 😊

What's what

- How are shutter speeds measured?
- What word also means aperture?
- What does B on the shutter speed dial mean?
- What ISO will work in low light and bright light settings? Why?
- What shutter speeds require a tripod?

What's what

- What is exposure?
- When using manual settings what do you have to change each time?