Shutters, Apertures and Depth of Field

Miss Wadycki and Mrs. VP
Aperture and Shutter

- Aperture and Shutter are 2 ways to control the amount of light entering your camera.
Aperture

- Measured in F/Stops
- Size of the actual opening inside the lens
Apertures

Examples of F/Stop numbers:
- F2.8, F4, F5.6, F8, F11, F16, F22
Aperture

- The larger the opening the more light will enter the camera.
- Smaller numbers refer to larger openings!!!
Aperture

F/2.8   F/4   F/5.6   F/8   F/11   F/16   F/22
Aperture

- When you open up a stop from let’s say… F/8 to F/5.6 you **DOUBLE** the amount of light in.
- When you close down a stop from F/5.6 to F/8 you **CUT** the amount of light in half.
Shutter Speeds

- Control the timing of your exposure
- Measured in fractions of a second
- Examples of shutter speeds:
  - 1/15, 1/30, 1/60, 1/125, 1/250, 1/500, 1/1000
Shutter Speed

- The longer the shutter is open... the more light hits the CCD.
Flash
2 Seconds
6 seconds
16 Seconds
VP’s best shot
Shutter Speeds

- When you decrease the shutter speed from let’s say… 1/125 to 1/60 you **DOUBLE** the exposure time.

- When you increase from 1/60 to 1/125 you **CUT** the exposure time in half.
Reciprocity

- Exposing with a lot of light for a short amount of time is the same as exposing with little light for a long time.
Shutter and Aperture

Reciprocity = how shutters and apertures work together!!

- F/11 $\leftrightarrow$ 1/125
- F/8 $\leftrightarrow$ 1/250
- F/5.6 $\leftrightarrow$ 1/500

Same exposure!
Depth of Field

- Small DOF = One thing is in focus
- Large DOF = Everything is in focus
Depth of Field

- Ways to control DOF
  - Aperture Number
  - Lens Length
  - Distance between you and subject
Depth of Field

- Large D of F
- Wide Angle Lenses
- Large Aperture #’s
- F/22

- Small D of F
- Long Lenses
- Small Aperture #’s
- F/2.8
So, what do I use?

- Stop and think about what you are taking pictures of.
- If it is moving quickly, fast shutter speeds are more important than your aperture.
- If you’re taking scenery pictures, depth of field is important, so your aperture is more important than your shutter speed.