

# **PHOTOGRAPHY FUNDAMENTALS**

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“The important thing is not the camera but the eye.” – Alfred Eisenstaed

# DIGITAL SLR CAMERA

# DIGITAL POINT & SHOOT CAMERA



# WHAT IS AN SLR?

- **SLR - Single Lens Reflex** - The camera has a viewfinder that sees through the lens by way of a 45°-angled mirror that flips up when the shutter fires and allows the light to strike the image sensor (or film).



# CAMERA MENU FUNCTIONS



# WHICH ONE?



# CREATIVE MODES

**P**

**Tv**

**Av**

**M**

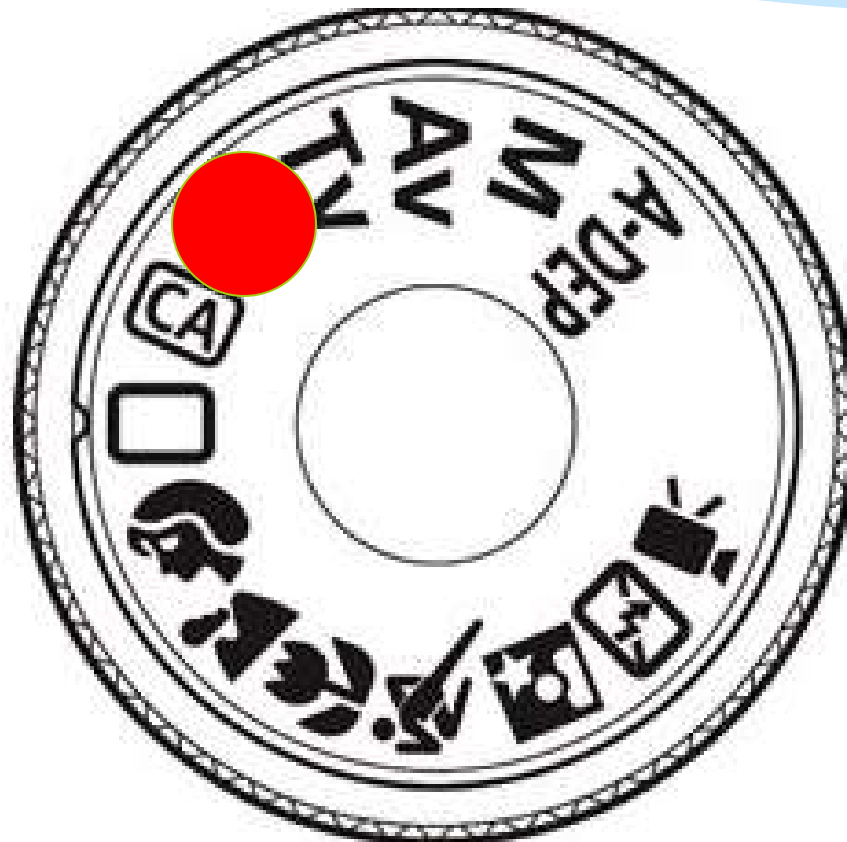
**A-DEP**



# SCENE MODES



# PROGRAM

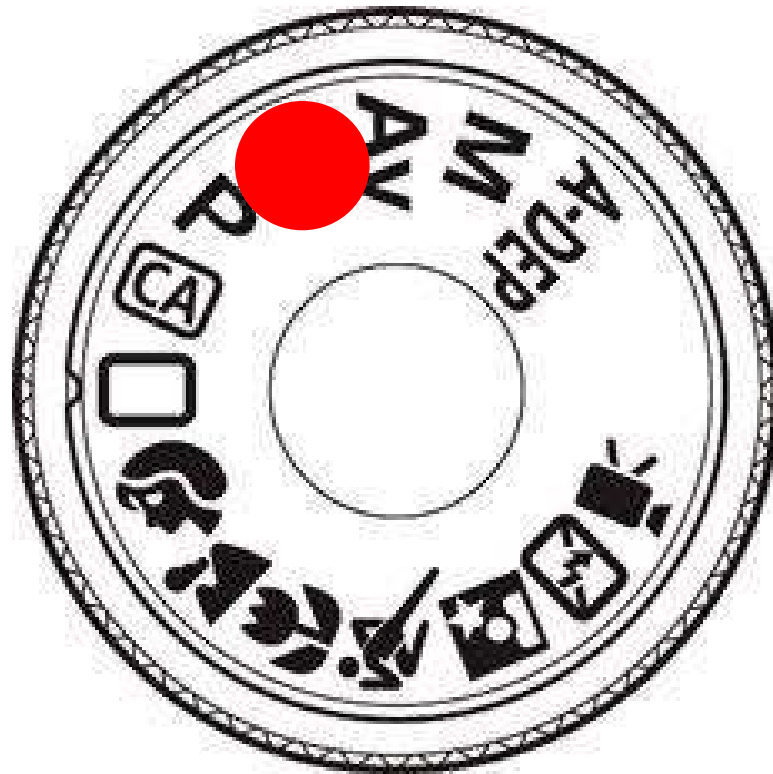




# CHARACTERISTICS OF PROGRAM MODE

- Aperture and shutter speed are set by the camera, but can be shifted using the control dial, with the exposure staying the same
- Unlocks some other settings in your camera that gives you more control over the final image : ISO setting, white balance, exposure compensation
- Great for quickly getting a photograph without having to think too hard about settings

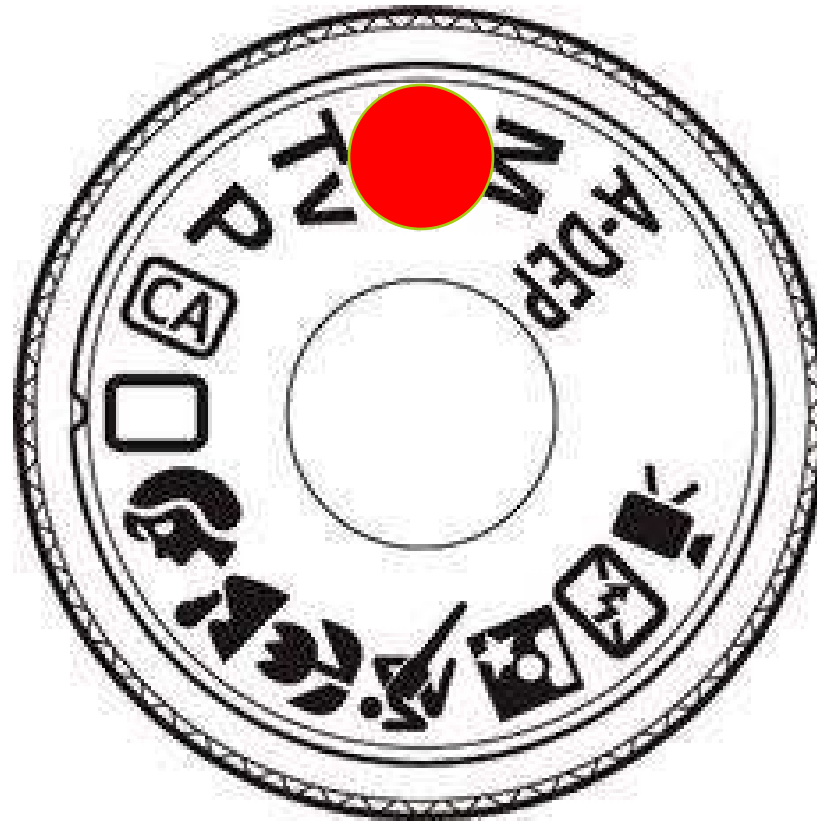
# TV-SHUTTER PRIORITY



# CHARACTERISTICS OF TV MODE

- TV means *time value*
- Shutter priority: set the shutter speed and calculates the matching aperture
- To photograph moving subjects (sporting action). A faster shutter speed will freeze the motion
- To capture movement as a blur of a waterfall, choose a slower shutter speed

# AV-APERTURE PRIORITY



# CHARACTERISTICS OF AV MODE

- AV means aperture value
- Manually control the aperture while the camera sets the matching shutter speed
- Particularly useful to control a stationary object where you don't need to control the shutter speed
- Choosing a larger aperture (f/stop) means the lens will get smaller and it will let less light in so a larger depth of field (more of the area in focus), but your camera will choose a faster shutter speed and vice versa

# MANUAL



# CHARACTERISTICS OF MANUAL MODE

- Full control over camera settings such: shutter speed, aperture, ISO, white balance and exposure compensation
- Gives you the flexibility to set your shots the way you want them to be
- Can result in creative and non-traditional exposures

# PORTRAIT MODE





# CHARACTERISTICS OF PORTRAIT MODE

- An automatic mode with emphasis on settings for a perfect portrait shot.
- The ability of the camera to detect if there are faces in the image and to ensure they are all in focus
- Sets a wide aperture of the lens so that the background behind your subject is softly focused (shallow depth of field)

# LANDSCAPE MODE



# CHARACTERISTICS OF LANDSCAPE MODE

- Narrows the aperture, so both the subject and background stay sharp (deep depth of field)
- Foreground, middle ground, and background are all in focus
- Exposure compensation for entire frame

# MACRO/CLOSE-UP MODE



# CHARACTERISTICS OF MACRO MODE

- An automatic mode with emphasis on settings for close-up photography
- Commonly used to photographing flowers, insects and other small items
- Some cameras may be able to focus when the lens is less than an inch away from the subject
- Creates a very shallow depth of field



# SPORTS MODE



# CHARACTERISTICS OF ACTION/SPORTS MODE

- Represented by an icon of a sprinter, this is perfect for taking pictures of moving objects
- Also good for shooting children or pets in action
- Can give you higher shutter speeds to stop action, along with a smaller aperture so that more of the action will be in focus

# NIGHT PORTRAIT MODE



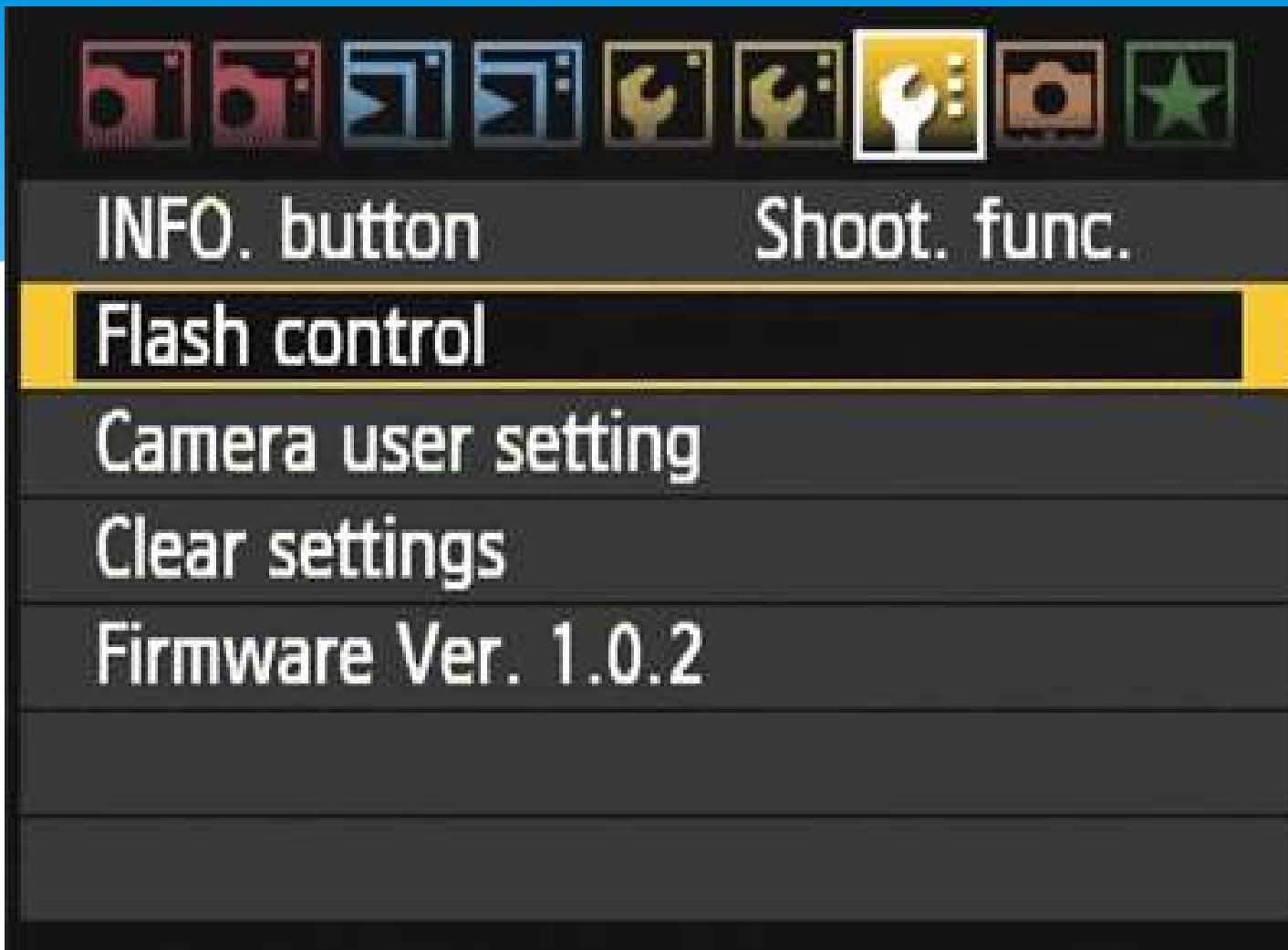


# CHARACTERISTICS OF NIGHT PORTRAIT MODE

- Usually symbolized by a figure against a dark sky with a star
- Fires the flash to illuminate a nearby subject and then holds the shutter open long enough for the background to be exposed

# FLASH





LOOK IN THE TOOLS SET FOR FLASH  
INFORMATION

# CHARACTERISTICS OF FLASH MODE

- Auto- Flash Off
- Flash On (mandatory flash, useful for filling in shadows when shooting in daylight)
- Auto + Red-eye reduction-
- Flash On + Red-eye reduction
- Soft Flash (Diffused flash)
- Slow-sync flash (Second-curtain flash)

# USE THE FLASH TO STOP MOTION





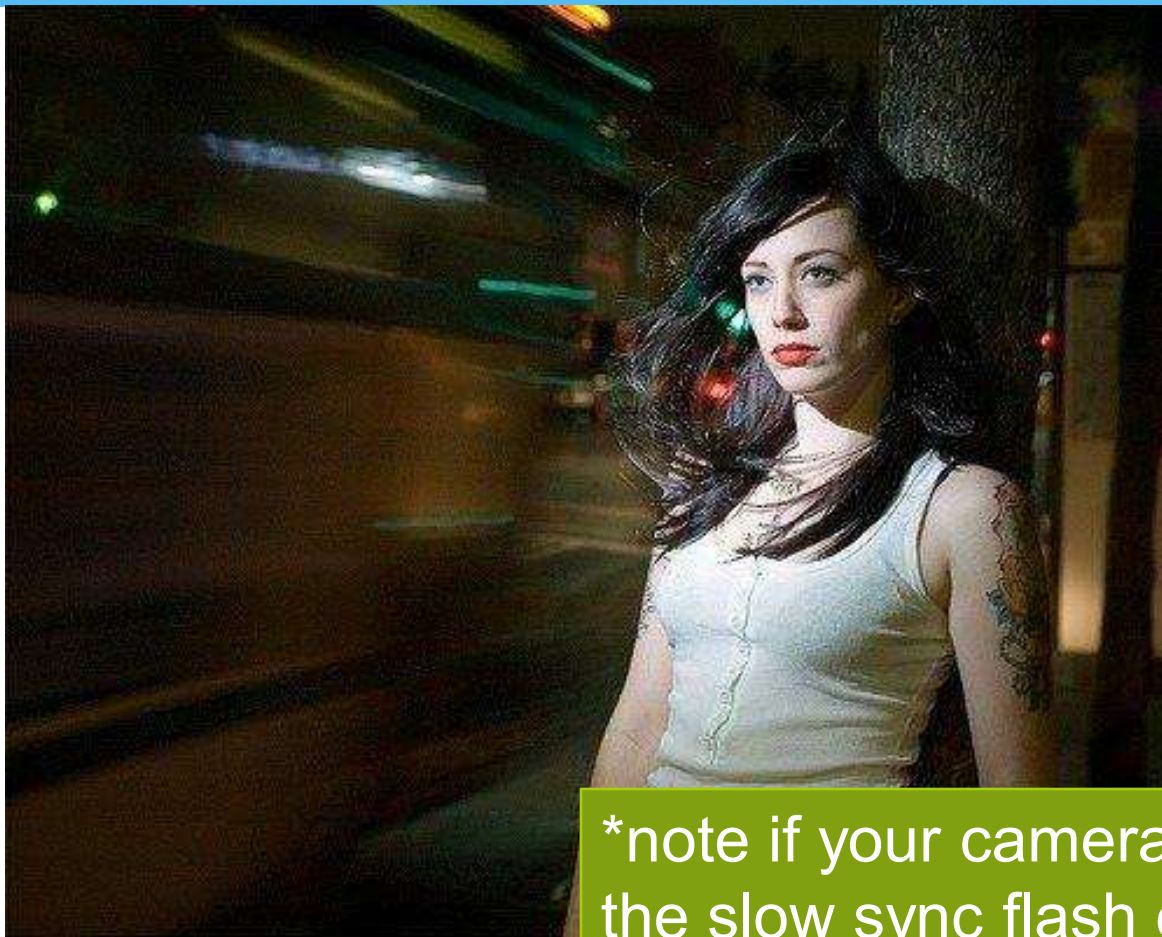
# OR TO ILLUMINATE DARK AREAS







# SLOW SYNC FLASH



\*note if your camera does not have the slow sync flash option use the night portrait setting

# DIFFERENT WAYS TO MAKE A GOOD PHOTOGRAPH

- Control exposure
- Aperture
- Shutter speed
- ISO

# EXPOSURE TRIANGLE

## The Exposure Triangle



# UNDERSTANDING EXPOSURE

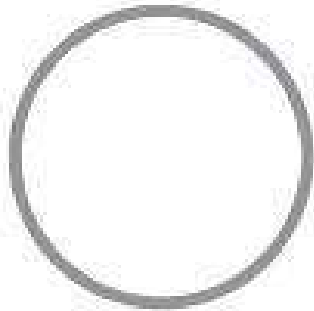
## • THE WINDOW EXAMPLE

- Imagine your camera is like a window with shutters that open and close.
- Aperture is the size of the window. If it's bigger more light gets through and the room is brighter.
- Shutter Speed is the amount of time that the shutters of the window are open. The longer you leave them open the more that comes in.
- Now imagine that you're inside the room and are wearing sunglasses. Your eyes become desensitized to the light that comes in (it's like a low ISO)
- There are a number of ways of increasing the amount of light in the room (You could increase the time that the shutters are open (decrease shutter speed), you could increase the size of the window (increase aperture) or you could take off your sunglasses (make the ISO larger)

# APERTURE

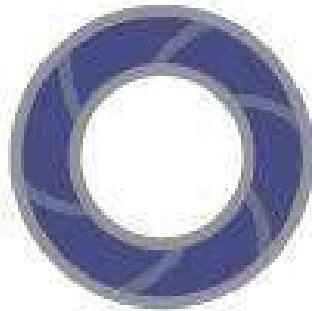
- The aperture of a lens is the diameter of the lens opening
- The larger the diameter of the aperture, the more light reaches the film / image sensor
- Aperture is expressed as **F-stop, e.g. F2.8 or f/2.8**
- The smaller the F-stop number (or f/value), the larger the lens opening (aperture) (inverse relationship)
- Controls depth of field

# APERTURE

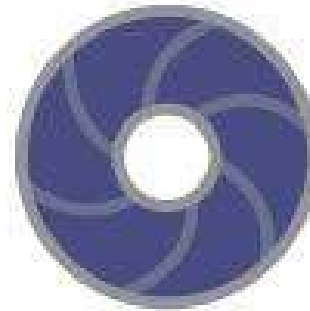


f2.8

more light



f5.6



f8.0

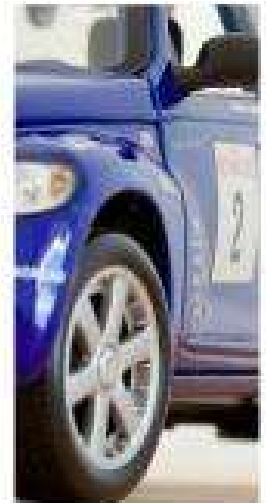


f11

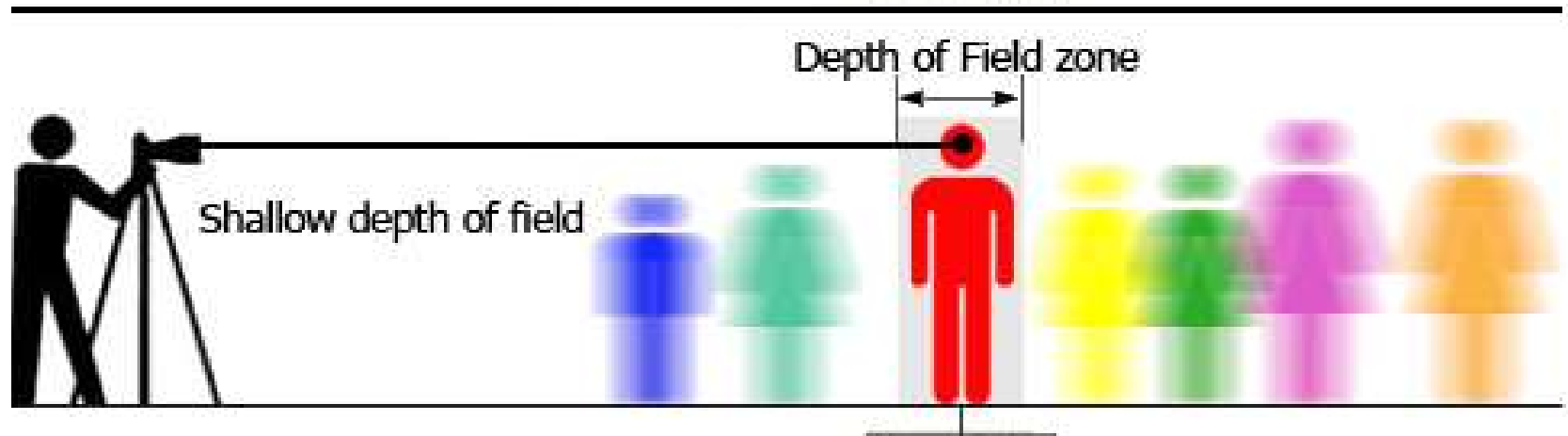
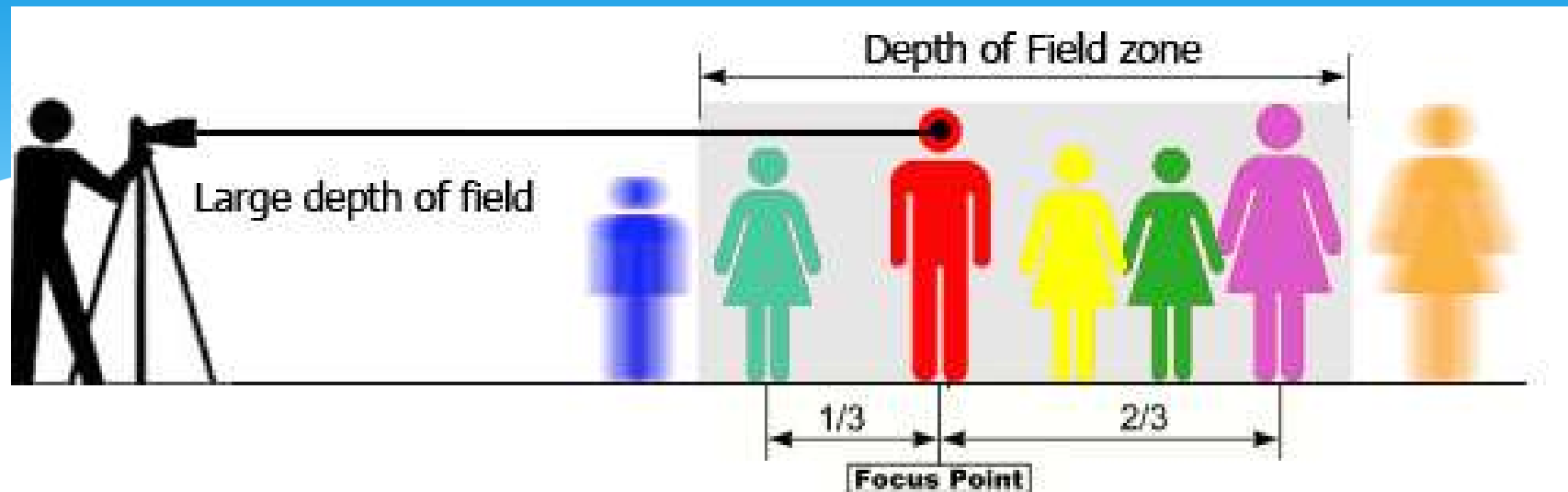
less light



Narrow



Wide



# F-STOPS



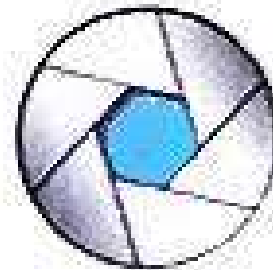
f/1.4



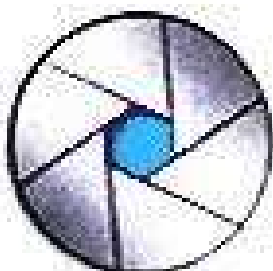
f/2



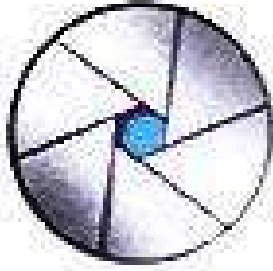
f/2.8



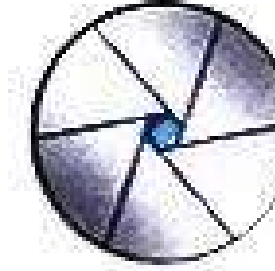
f/4



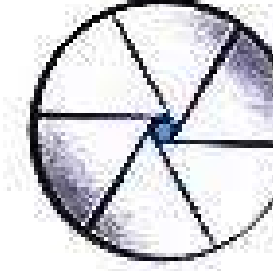
f/5.6



f/8



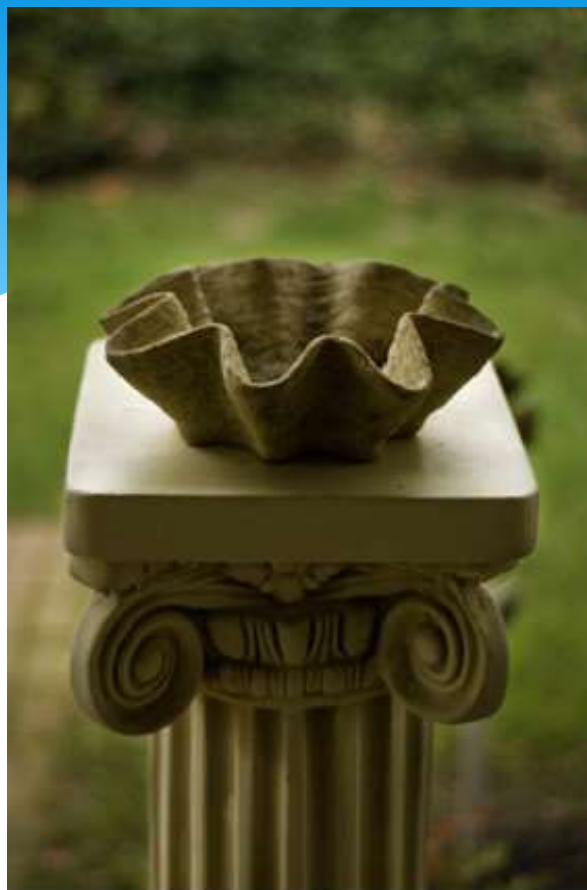
f/11



f/16







aperture....f 1.8  
shutter.....1/500  
ISO.....100  
distance...~3ft



aperture....f 4  
shutter.....1/125  
ISO.....100  
distance...~3ft



aperture....f 8  
shutter.....1/40  
ISO.....125  
distance...~3ft



Aperture: F/5.6

Shutter Speed: 1/400 sec.

ISO: 100



Aperture: F/20

Shutter Speed: 1/125 sec.

ISO: 400

Please refrain  
from taking  
such a boring  
image

IS THIS SHALLOW D.O.F?





# IS THIS?



# SHALLOW OR DEEP D.O.F.?



# Depth of Field EXERCISE

- Pick a partner
- Stand away from your partner
- Take a photograph of their face only with your lens unzoomed
- Zoom in and shoot but only fill the frame with their entire face again
- See the difference in depth of field



# SHUTTER SPEED





# SHUTTER SPEED

- Shutter speed is the amount of time that the shutter is open
- Shutter speed is measured in seconds – or in most cases fractions of seconds
- It is not in isolation from the other two elements of the Exposure Triangle (aperture and ISO)
- Long shutter causes blur and fast shutter freezes motion



Shutter speed is used to stop action  
1/1000 sec



Or shutter speed can blur motion  
1/15 sec

# FAST OR SLOW SHUTTER SPEED?



# FAST OR SLOW?



# SHUTTER SPEED EXERCISE

- Everyone pick a partner
- Step outside the classroom
- Capture an image of action (jumping, spinning, etc.)
- Stop the action with a fast shutter speed
- Blur the action with a slow shutter speed

# ISO SETTINGS

- **ISO speed** ≡ A rating of a film's sensitivity to light. Though digital cameras don't use film, they have adopted the same rating system for describing the sensitivity of the camera's imaging sensor. Digital cameras often include a control for adjusting the ISO speed; some will adjust it automatically depending on the lighting conditions, adjusting it upwards as the available light dims. **Generally, as ISO speed climbs, image quality drops.**

# ISO SETTINGS







ISO 100  
[View Full Size Image](#)



ISO 200  
[View Full Size Image](#)



ISO 400

# Characteristics of ISO

- Low light conditions use higher ISO
- Action shots use a higher ISO
- Keep ISO lower in bright light
- The higher the ISO number the more noise is generated in your photograph
- When you enlarge your image you can see the noise





Using ISO 1600 to capture a night scene

# The End

\*Time to take pictures...