



## Peninsula College Continuing Education – Digital Photography

### Week 2 - The Histogram, White Balance, and Stay in Focus

- Appreciate digital exposure using the histogram
- Understand the concept of white balance
- Use a tripod and a shutter release or timer

**Not all digital cameras have the same doohickeys and thingamabobs. But, you need to think about the conditions you are photographing in and what you can do to improve your chances for a good photo. You have to experiment with your camera settings to find what works best for you and your aesthetic.**

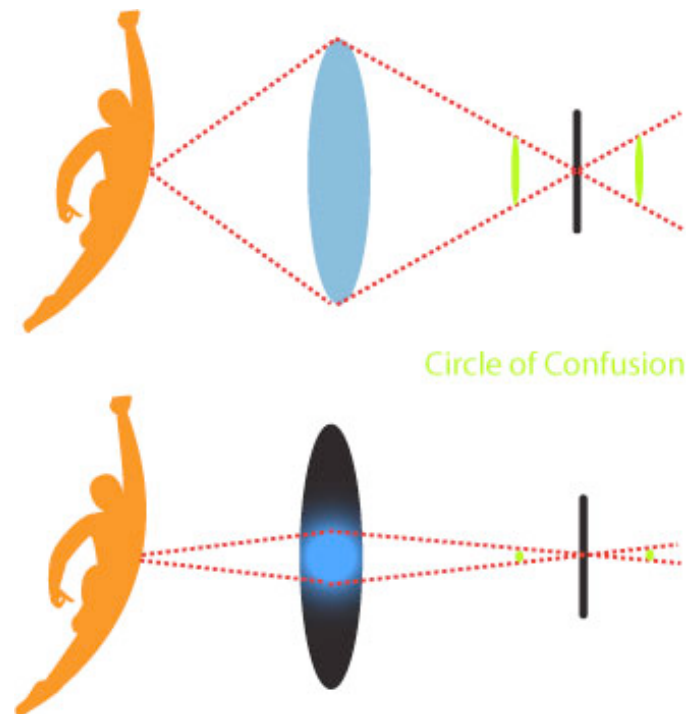
### Looking and Lens

**Focus** – The point at which light rays converge to form a sharp image.

**Depth of Field** - the range of distance within the subject that is quite sharp. Your depth of field will vary depending on camera and lens type, aperture, and focusing distance. When photographing, farther distances have a more equal depth of field and closer distances equal less depth of field. Longer lens = less depth of

field. Shorter lens = more depth of field.

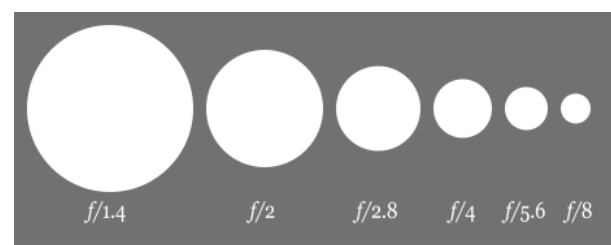
**Circle of Confusion** – any unfocused areas or pools of light in front of or behind the depth of field.



**Focal Length** - is the distance from the lens to the film when it is focused on a subject at infinity. You see this in horror movies all the time where they change camera's distance from the screaming subject while changing focal length at the same time.

**Aperture** – the opening of the lens which light passes. Also know as the f-stop.

**F-Stop** – a ration that equals the focal length of the lens divided by the diameter of the lens aperture.



The Aperture is like our eyes in a way, the wider it is the more light comes in. So when it is dark our eyes dilate the pupil to take in as much light as possible. Compared to when you

think of focusing on something, you squint your eyes.

The smaller the f-stop number = the larger the opening. The larger the f-stop = smaller opening. Aigh! What does that mean?

Smaller apertures equal more depth of field. Bigger apertures equal less depth of field. In low light, you might want a larger aperture.

## Light and Exposure

**Shutter** – the mechanism to control how long the film or digital sensor is exposed to light.

**Shutter speed** - the length of time a shutter is open.



**Exposure Compensation** – This mode allows you to adjust the current exposure settings to be more or less than what the camera's internal program thinks the exposure should use.

**Film Speed or ISO** (International Standards Organization) – the numerical designation that indicates the sensitivity of a film or sensor to light.

**Histogram** – the graph that shows the distribution of tones in a digital image ranging from black to white.

**White Balance** – a setting on the camera that corrects and balances the camera to a set light source to ensure that white objects are really white without a color cast.

**Slow down you move too fast – got make the morning last and feeling groovy.**

The length of your shutter speed will capture a moment or moments. The faster speed works well with action and brighter light. Slower speed is good for low light and to capture movement. When you see photos of the night sky with the stars spinning around the north star - that shutter speed might be hours long to capture the earth spinning.

## ISO – Film Speed – Sensitivity

For the most part, the auto ISO is okay for shooting. The higher the ISO setting the more digital noise will appear. 400 is a good speed for inside and out, but a lower one will give you more detail. Test several speeds in manual mode to see what you like – don't trust your little LCD screen on the camera – load it on your computer to compare.

## The Bell Curve - Histogram

Some digital cameras include a histogram display either during the Record mode or in the Playback mode. This is your new light meter to decide if a photo is over or underexposed. The histogram shows a graph if a photo is too dark (D) or has too many highlights (H). The perfect shot would have a tall bell in the middle, not too dark or light.

### Too Dark!

If the histogram shows a photos is too dark, there are a few things you can do to try to solve the problem:

Widen the aperture, while retaining the shutter speed.

Slow down the shutter speed, while retaining the same aperture.



Dial in a positive exposure compensation.

### Too Bright!

If the histogram shows a photos is too bright, here are a few things you can do to try to solve the problem:

Narrow the aperture, while retaining the shutter speed.

Speed up the shutter speed, while retaining the same aperture.



Dial in a negative exposure compensation

## **White Balance – your buddy in the camera**

Most cameras have an auto white balance to guess what is white under most light conditions. Your camera also may have settings for daylight, cloudy, incandescent, and fluorescent light sources. But, the best way to set your white balance is manually.

Check your camera manual for instructions. Set up your shot and then point the camera at a white source (like a piece of paper) and set that as white. Ta-da! Enjoy the results!

You can fix a lot of this color and exposure issues in an image enhancement program like Photoshop, but it is much, much better to get a good photo first instead trying to fix a bad one.

## **Stay steady and stay in focus**

### **Use a tripod!!!**

When you are using slower shutter speeds or longer lens, you need to really use a tripod. But, using a tripod all the time makes you a better photographer – you will take more time shooting.

### **Use a shutter release or a timer!!!**

No matter how steady you think your hand is, you still are moving. Come on! You have to breathe! Using a shutter release or a timer lets the camera be hands free and not shake your shot.

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