

CREATIVE EXPOSURE

Modern Cameras

- Modern cameras have great auto features, but no taste.
- Modern cameras have more computing power than onboard the Apollo shot to the moon
- If you strip away all the electronics, cameras actually haven't changed since the 1800s.

Light vs Subject

- People often focus on the subject instead of the light.
- Light and shadows create texture and control the viewer's eye.
- Controlling the viewer's eye is the heart of composition.

Exposure Components

- Shutter Speed - controls the capture of motion.
- Aperture - controls depth of field.
- ISO - controls the sensitivity of the sensor.
- Controlling these three components of exposure provides us with tremendous creative potential.

Your Camera's Light Meter

- Attempts to measure the scene, and turn it into a medium grey tone (not color).
- To do this, it measures the light when you half press the shutter and adjusts the shutter speed, aperture, or ISO.
- Most scenes reflect 18% of the light that hits them, and camera light meters assume that they are seeing 18% of the light.

Shutter

- Your shutter controls how long the lens is open and how much light reaches the sensor.
- Most SLRs have a first and second curtain used in a focal plane shutter.
- Some point and shoot cameras just turn the sensor on and off.

Focal Shutter

- <https://www.youtube.com/watch?v=fyqbIuTzRVI>

Leaf Shutter

- Built right into the lens.
- Perhaps I'll bring one in from a view camera.

Standard Speeds

- $1/15, 1/30, 1/60, 1/125, 1/250, 1/500, 1/1000$
- $1/2000, 1/4000$
- Notice that each of these times is twice as much or one stop difference.
- Of course we can open the camera for long shutter speeds up to hours.

Fast Shutter Speeds

- Allow you to stop motion.
- Con: with focal plane shutters can't sync with a flash.

Slow Shutter Speeds

- Allow you to blur motion in a scene - waterfall images.
- Under many light conditions you will need a neutral density filter - perhaps bring the big stopper
- Con: without a tripod you will introduce camera shake blur.

Class Exercise 1

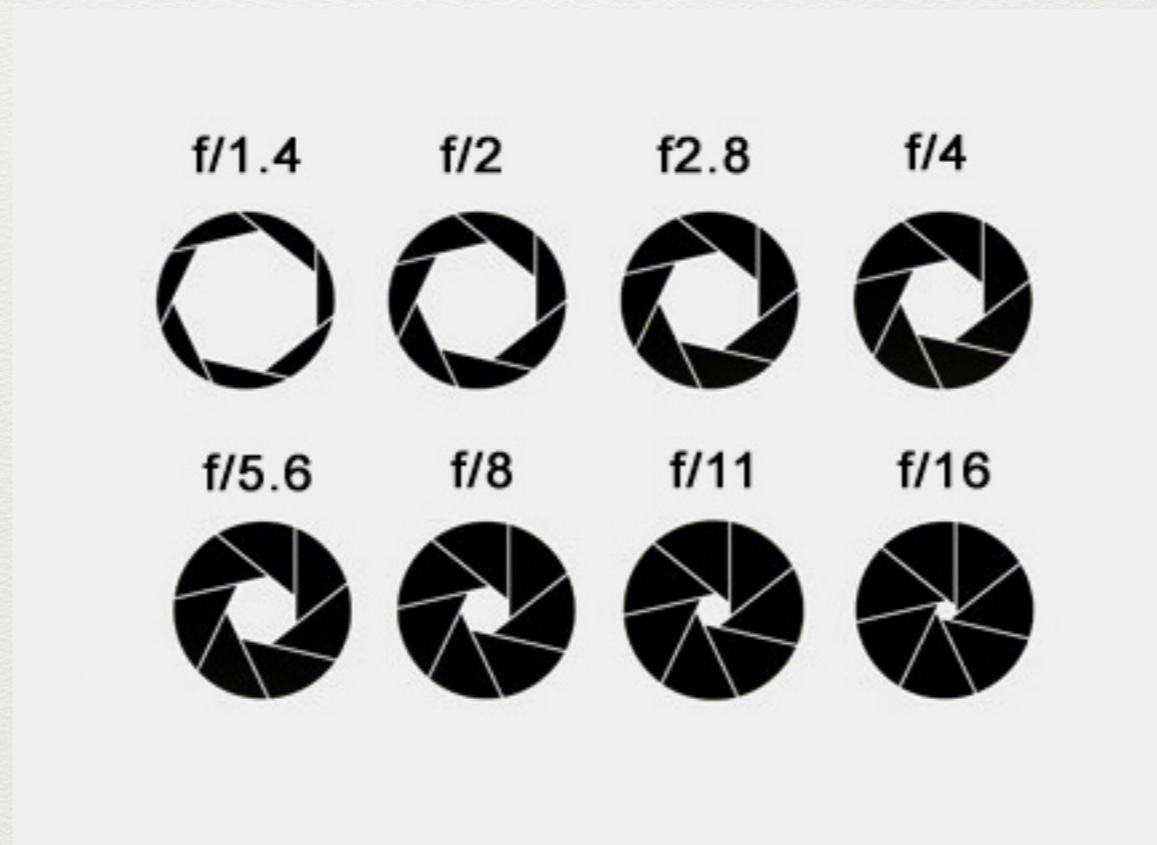
- Use the moving toy and make an image where the motion is stopped.
- Use the moving toy and make an image where the motion is blurred.
- May need a tripod for the long shutter speed.

F-Stops

- Take your card and write down whole F-stops without looking at your camera.

Aperture

- Ratio of the size of the hole to the focal length of the lens.



Aperture 2

- Aperture changes the DOF.
- This is a major composition effect.
 - Your eye will go to what is in focus.
- Wider apertures (little numbers) give shallow DOF
- Apertures as small as 1.4 or 1.2 you may not be able to get both eyes in a portrait in focus unless the face is square to the camera.

Aperture 3

- Of course, where you focus, and your aperture determines what is sharp and what is blurred.
- Your autofocus simply chooses a depth from the camera to establish focus.

Focus Thumb Rules

- Portraits - always establish focus on the nearest eye.
- For landscapes with deep DOF the typical rule is to focus $1/3$ of the way into the scene.
- Ansel Adams and the F64 group.
- For perception of a shallow DOF use a telephoto lens and zoom in. This will make the blurry background appear larger.

Bokeh

- More rounded with more blades.



Viewfinder

- You can not use your viewfinder to see your DOF without pushing the DOF button on your camera.
- Your viewfinder shows a .jpg that is always brightened and saturated so that it can be seen in daylight.
- Using the DOF button, you may need to shield out light like the old view camera users did with their cloth over their heads. You just use your hands around the viewfinder.

Exercise 2

- Shoot 3 objects on a table, one image only has the center object in focus, one image has all three objects in focus.
- May need a tripod for the small aperture shots which may need a long shutter speed.

ISO

- ISO is a measure of the sensitivity of the sensor.
- ASA and ISO are the same.
- High ISO brings noise into your image.
- When you change to a high ISO, the sensor signal simply gets more amplification. So, like a record player that you turn the volume up, and get noise, so will amplification of the sensor signal give noise.

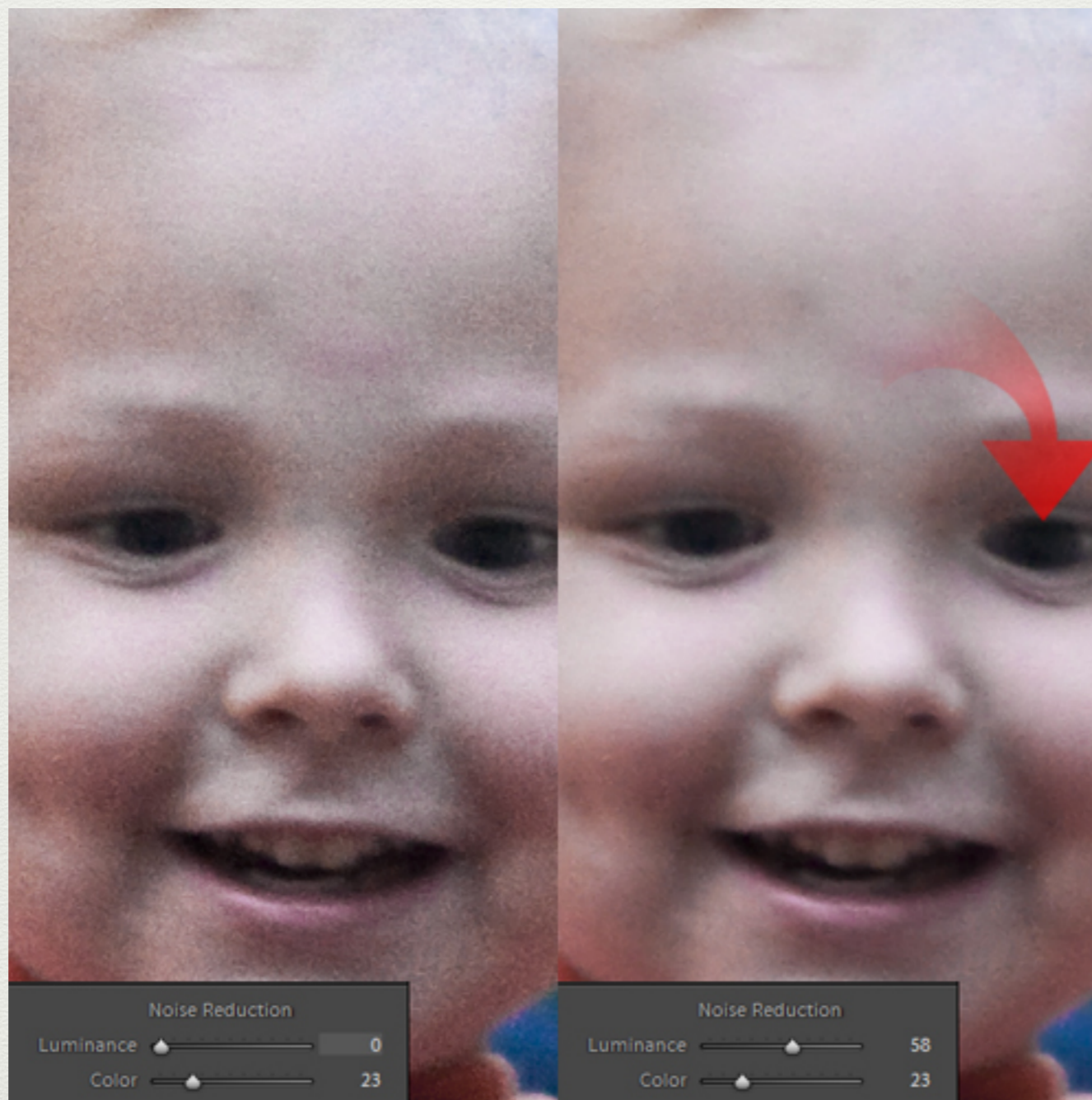
ISO settings

- The typical settings for ISO are:
- 100, 200, 400, 800, 1600, 3200
- Again, note these are doubles or one stop differences.

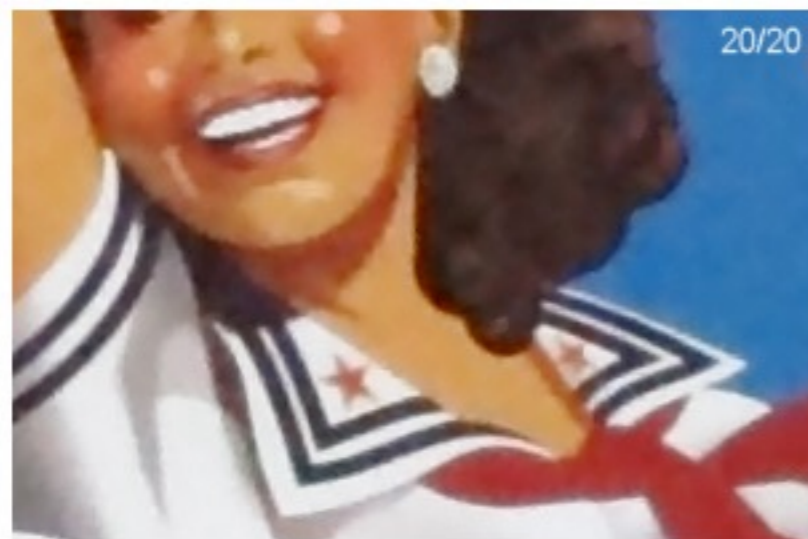
Noise

- Luminance noise is often nice, it looks like film grain.
- Chrominance noise is awful, and gives color banding that is almost impossible to correct.

Luminance Noise



Chrominance Noise



Print Test

- To evaluate the effect of noise, you will need to do a test print.

Exercise 3

- Shoot an image with the lowest ISO your camera has and a second image with the highest ISO your camera has.

Dynamic Range

- Seeing Different Tones
- Your eye has a dynamic range of somewhere between 18-20 stops.
- Depending on the quality of your camera, it has a dynamic range of somewhere between 7 and 12 stops.

HDR

- Unless you are doing HDR photography, you often can't get all the tones your eye sees replicated in your image.
- However, you can adjust your F-stop from what is recommended by your camera to create the image you want.

Taking vs Making

- Again, modern cameras have great auto features but no taste.
- You can choose what tones in the scene have what tones in your image.
- Make your image instead of just taking a snapshot.
- Focus on the light.

Light Meter Types

- Reflective - generally what is in your camera - again most scenes reflect back 18% of the light that hits them.
- Incidence - hand held meters. — bring mine.
 - with strobes it is best to point back to the light.

Reflective Metering

- <https://www.youtube.com/watch?v=t4uCzirIOwY>

Adorama TV Exposure

- <https://www.youtube.com/watch?v=Axt9zLxdE8s>
- <https://www.youtube.com/watch?v=UrsF0Xba2KY>
- https://www.youtube.com/watch?v=jun_h1hVh4Y&list=PLBC5A73FEA8B7D7D2&index=89
- <https://www.youtube.com/watch?v=PijtJFw7B44&list=PLBC5A73FEA8B7D7D2&index=88>

Procedure

- You must use a spot meter to only meter a specific area of interest.
- You will probably want to do this in shutter speed mode setting your shutter speed to what you need.
- Note the suggested aperture.
- If you want that tone to be black, shoot the scene 4.5 stops down (larger numbers)
- If you want that tone to be white, shoot the scene 2.5 stops up (smaller numbers)

Exercise 4

- Use the board and make a middle grey card black in your image.
- Use the board and make a middle grey card white in your image.

Exercise 5

- Shoot an object with the grey background - have the background grey.
- Shoot an object with the grey background - make the grey background white.
- Shoot an object with the grey background - make the grey background black.