

Photographing Your Art



What do we want?

- Excellent results
- Repeatable process
- Inexpensive
- Easy setup

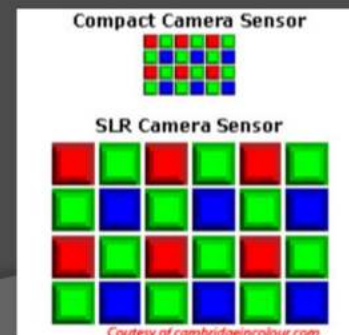


What we hope to achieve

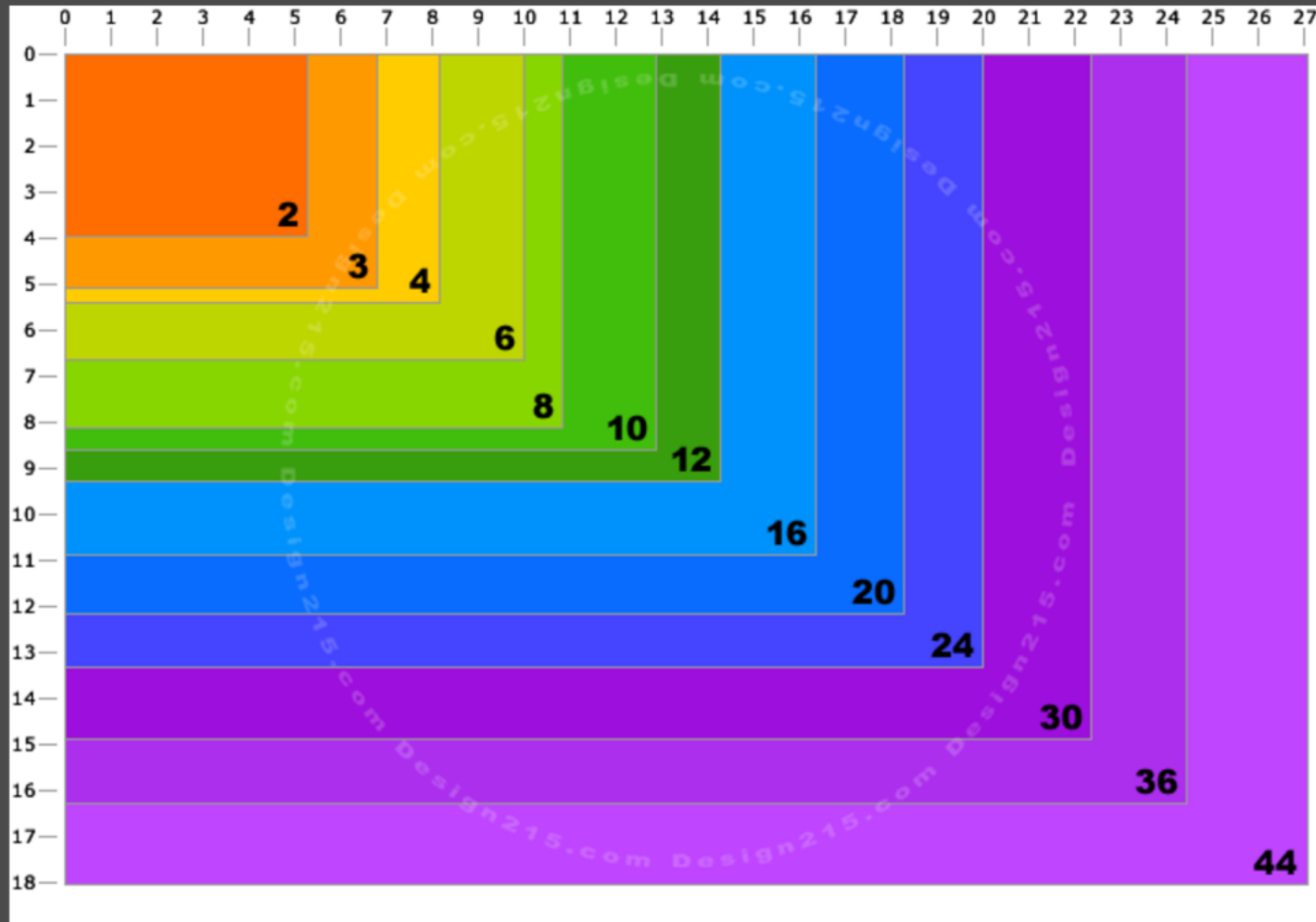
- **Understand the basics**
 - Learning just a few features can help in achieving powerful & meaningful photos
- **Rules of Thumb for taking a good shot**
 - Exposure, Depth of Field, etc.
- **Creating a Photo Studio**
- **Digital Darkroom Techniques**

Types of Digital Cameras

- ◎ **Point and Shoot**
 - Small, compact and lightweight
 - Very User-Friendly
 - Image Quality improved drastically
- ◎ **Digital SLR (D-SLR)**
 - Higher quality photos
 - Favor manual controls
 - Much larger and heavier
 - Interchangeable lenses
- ◎ **Prosumer DSLR**



Megapixels Vs. Print Size



Memory Cards



- **Size** does matter
 - Take lots of pictures!
Delete the bad, keep the good
- **Speed**
 - Slower speed = longer to store image
 - Camera may limit speed
 - Not an issue for us!

JPEG Format	2 GB	4 GB	8 GB	16 GB	32 GB	48 GB	64 GB
6 Megapixels	730	1,460	2,820	5,840	11,680	17,520	23,360
7 Megapixels	650	1,300	2,600	5,200	10,400	15,600	20,800
8 Megapixels	580	1,160	2,320	4,640	9,280	13,920	18,560
10 Megapixels	440	880	1,760	3,520	7,040	10,560	14,080
12 Megapixels	340	680	1,360	2,720	5,440	8,160	10,880
14 Megapixels	260	525	1,050	2,100	4,200	6,305	8,400
18 Megapixels	154	310	620	1,240	2,480	3,725	4,960

Getting the best quality

◎ Image format

- RAW - “digital negatives”, need digital darkroom!
- TIFF – Loss-less compression. High quality, print images
- JPEG – “Lossy” compression. Quality/size tradeoff

◎ Image Quality Setting – “Large/Fine”

- “Large” uses all the pixels available
- “Medium” or “Small” reduces pixels density
- Fine/Normal sets JPEG compression
 - Normal increases compression thus reducing quality

Effects of JPEG Compression

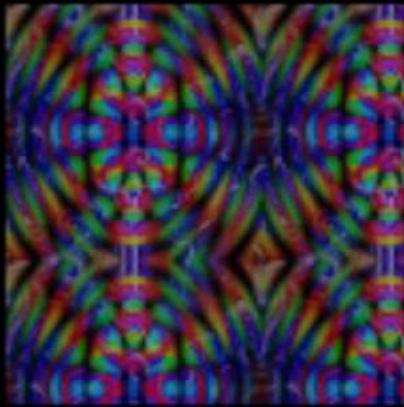




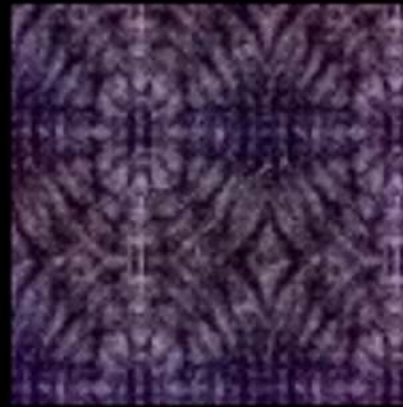
JPEG Generations

With 300% magnification

Original



1024 rotations



Set up:

- Create 100x100 pixel JPG image
- Open it, rotate 90 degrees CW, save as new JPG with max. quality
- Open same image, rotate again, * ...

Changes noted:

- Color desaturates fast
- Patterns form after many rotations
- Pure B/W without diagonal patterns (C) does not change



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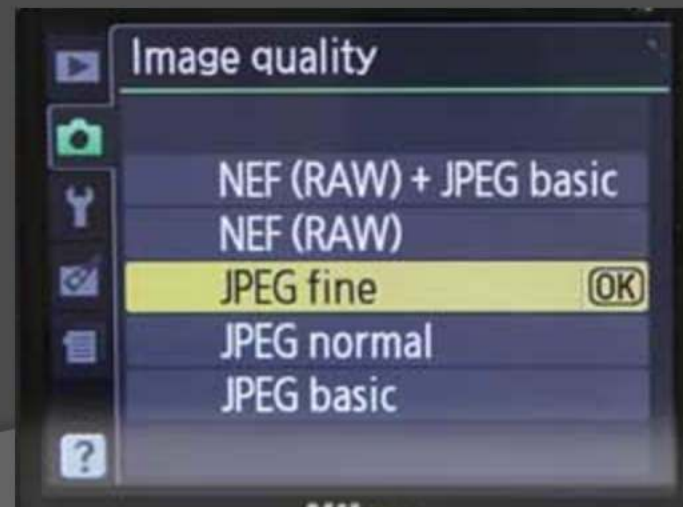
DEMO

JPEG Settings
ISO Speed

IMAGE QUALITY

Rules To Shoot By...

- Use the best image setting available
 - “Large/Fine” – Canon
 - “JPEG/Fine” – Nikon
- “RAW” is excellent
 - Contains all the information the sensor sees
 - Minimal to no Camera Pre-Processing
 - Must process with software



Getting the Right Exposure

- Image affected by shutter speed, aperture, and ISO (sensitivity to light)

Shutter Speed

Time shutter is open

Enables “stop action” photos above 1/600 sec

Portrays “motion” below 1/60 sec. on action shots

Aperture

Width of lens opening

Controls Depth of Field

Low # = Smaller DoF
High # = Larger DoF

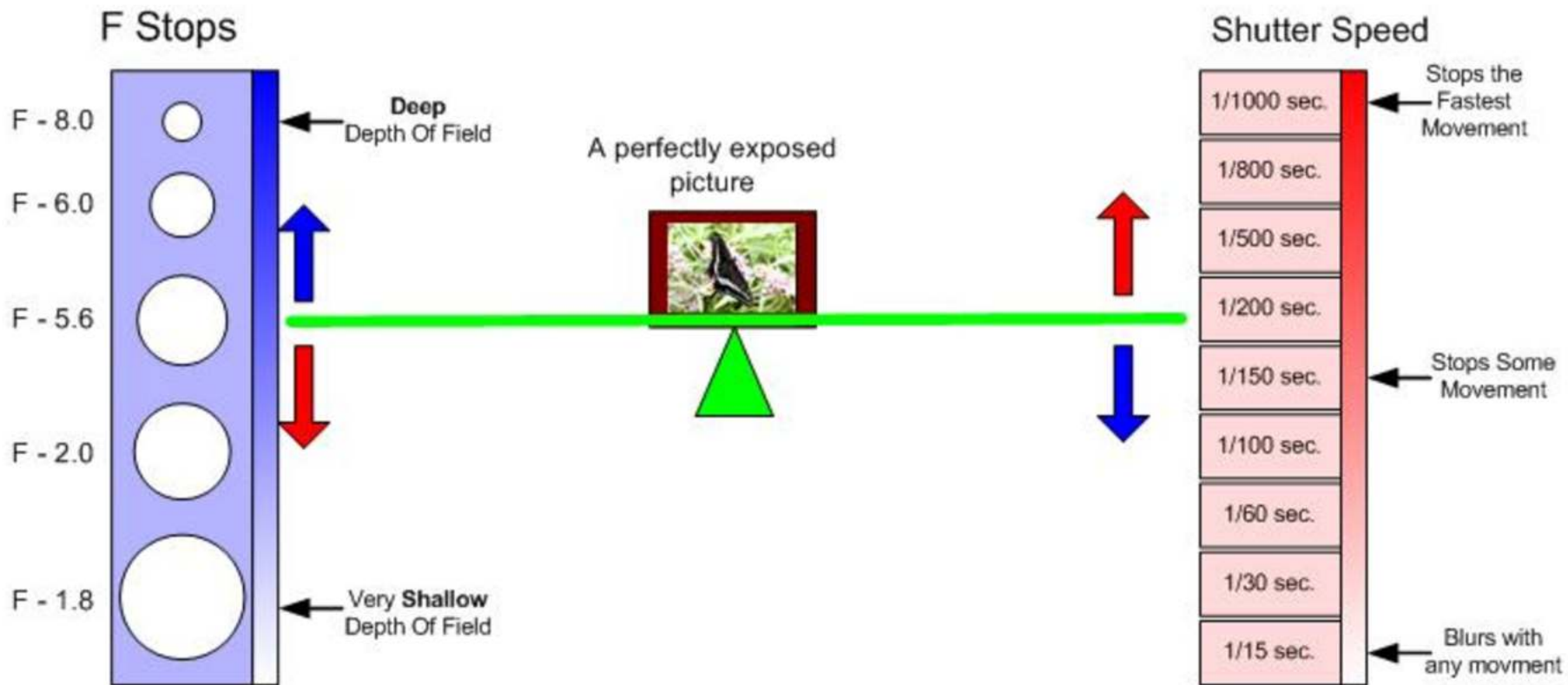
ISO

Sensitivity to light

Useful in extreme low light situations

HIGH ISO =
MORE sensitive
LESS LIGHT to get the right exposure

Aperture & Shutter Speed



When to prioritize *Shutter Speed*



When to prioritize *Aperture*



Shallow Depth of Field (F2.8)



Wide Depth of Field (F32)

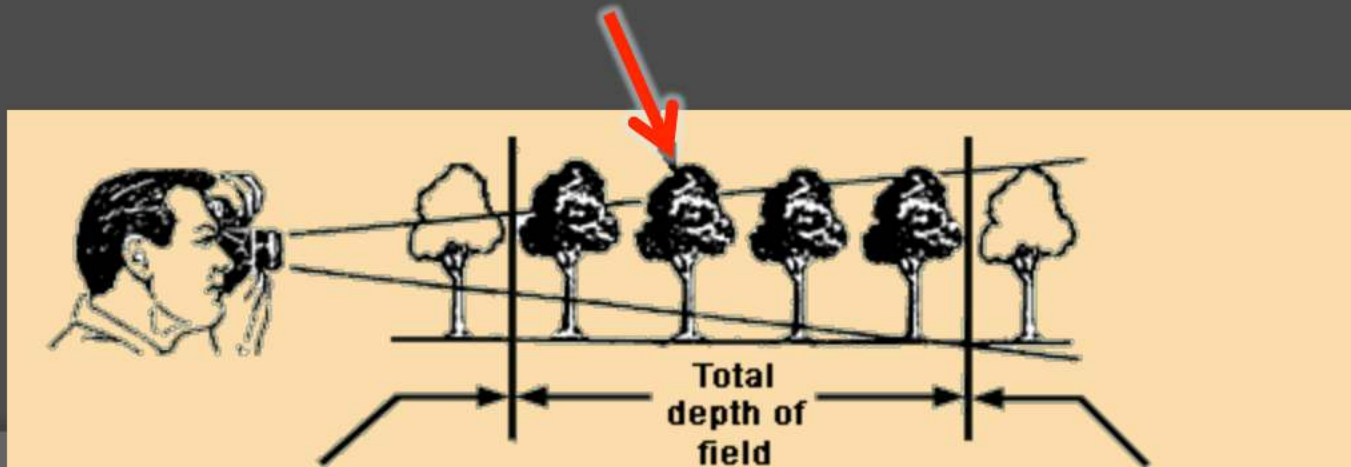
Setting Aperture

◎ Use APERTURE PRIORITY

- Shutter speed automatically adjusts
- Some P&S cameras lack “AE” mode – Try
 - “Auto” mode is a good starting point
 - “Scene Modes”
 - *Portrait* Subject in focus, background blurry
 - *Landscape* mode. Wide depth of field

Focusing & Depth of Field

- **In-focus area is split forward and back from focal area**
 - Aperture setting, distance to object, type of sensor, and lens setting (eg 50mm) all affect focal area
- **Focal Point “Rule of thumb”**
 - Most shots → 33% in front and 67% past focal point (50/50 for close shots)



Determining Depth of Field

Depth of Field Calculator

Camera, film format, or circle of confusion Canon 7D	Subject distance 10 ft
Focal length (mm) 25	Depth of field
Selected f-stop f/8	Near limit 5.76 ft
Subject distance 10 feet	Far limit 37.8 ft
<input type="button" value="Calculate"/>	Total 32 ft
	In front of subject 4.2 ft (13%)
	Behind subject 27.8 ft (87%)
	Hyperfocal distance 13.6 ft
	Circle of confusion 0.019 mm

[Online calc](#) [Lens online](#) [E online](#) [Http online](#)

On-line tools –
www.dofmaster.com/dofjs.html

Phone Apps –
 Simple DoF Calc

AT&T 8:54 AM 94%

Canon Rebel T3(i), T4i

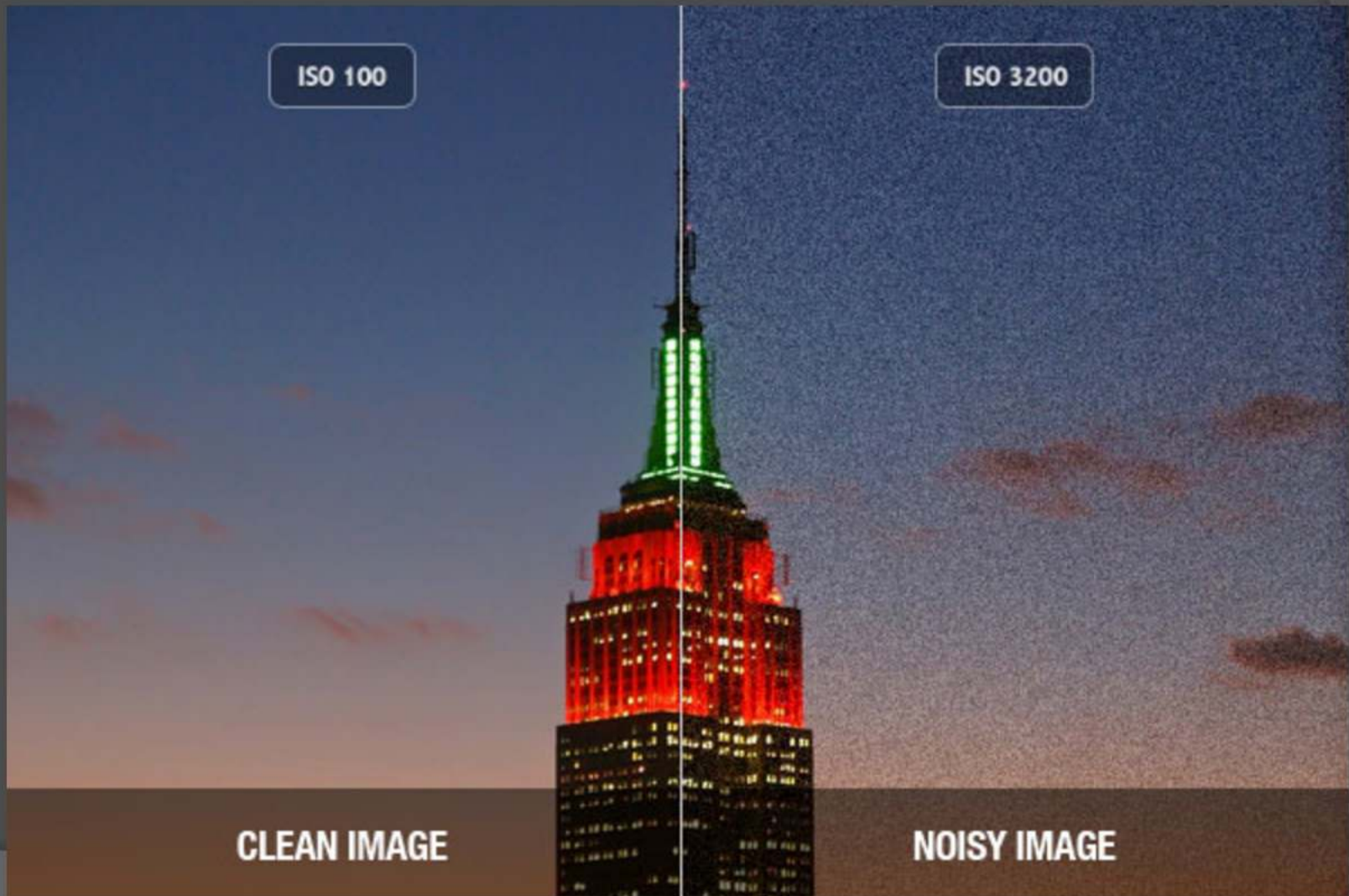
3' 2.00"
 2.00"
 1.80"
 2' 10.20"

3.79"

Hyper Focal 54' 1.50"

f/stop	lens	focus
6.7	48	1
7.1	49	2
f/8	50 mm	3 ft 0 in
9	51	4 1
9.5	52	5 2

Effects of ISO





DEMO

Depth of Field & Aperture
Focal Point

EXPOSURE

Customize White Balance

- Use presets within the camera...OR
- Manually set White Balance
 - Requires an 18% grey card (~\$10)
- Avoid Auto White Balance
 - Inconsistent results between turnings



Stabilize the Camera

◎ Tripods

- Sharp images
- Eliminates shake
- Get a good one. Spend \$\$\$!

◎ Remote Shutter Release

- Camera Timer
- Remote Cable Release



DEMO



WHITE BALANCE

Rules To *Expose (?)* By...

1. **APERTURE** Priority enables...
2. **Better control of Depth of Field**
 - Higher number > DoF
3. **Focal Point**
 - ~ 1/3 to 1/2 into turning
4. **Watch ISO**
 - 100 ~ 400 is good
5. **Set White Balance**
6. **Stabilize camera**



A comment about *Lenses*

- **Use a longer lens**
 - The subject looks better when the camera is farther from the subject
 - Depth of Field is wider
- Keep camera roughly level with artwork
- Focus about $\frac{1}{3}$ to $\frac{1}{2}$ into to object



The Gloom & Doom of **ZOOM**

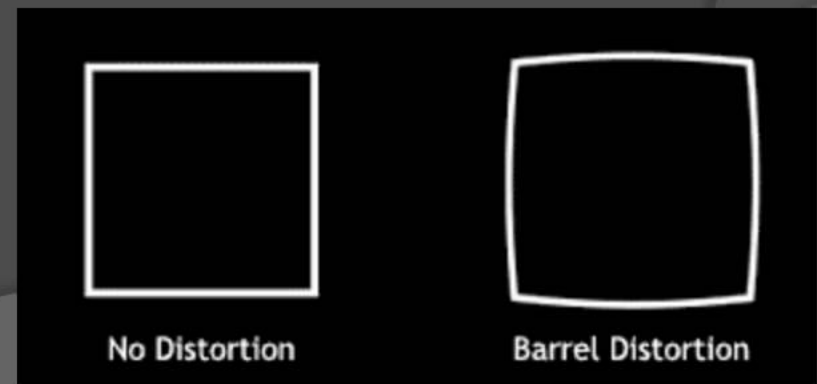
- ⦿ Don't "over zoom"
 - Limits options later
- ⦿ Give yourself plenty of room
- ⦿ Use the "digital darkroom" to straighten and/or crop photo



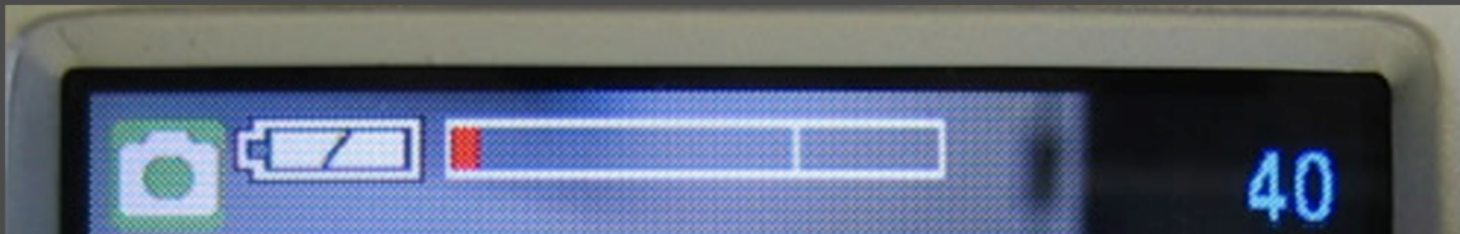
The Gloom & Doom of **ZOOM**



- Generally stay away from the lower level of a zoom lens
- “Might” have barrel distortion or lack of sharpness
- Improves Depth of Field



The Gloom & Doom of **ZOOM**



Optical ZOOM

- The lens changes focal length and magnification as it is zoomed.
- Image quality is high throughout the zoom range.

Digital ZOOM

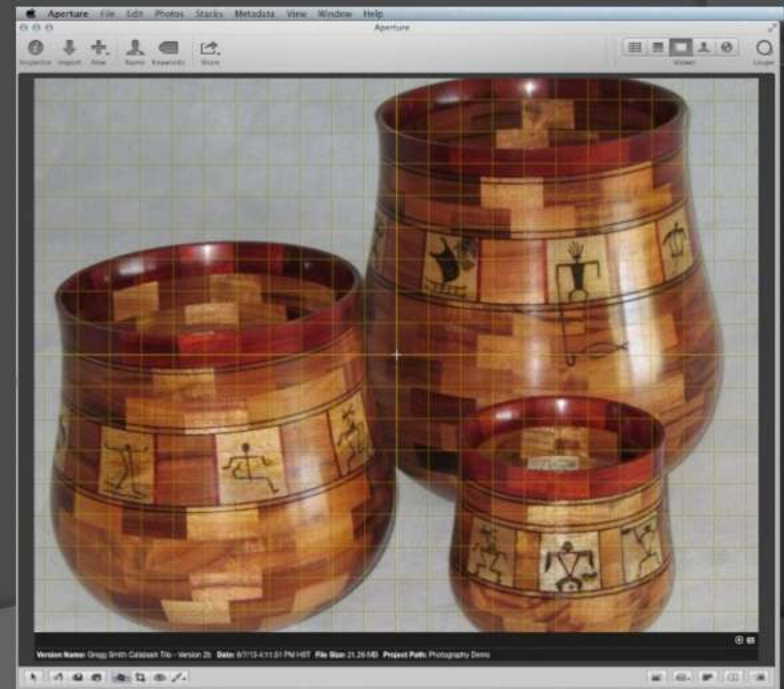
- Crops the image to a smaller size
- Enlarges the cropped portion to fill the frame again
- Significant loss of quality

Don't use DIGITAL ZOOM!

DISABLE IT if you can

Rules To *Zoom* By...

1. Keep enough background to “play” in the Digital Darkroom
2. Stay away from lowest Zoom setting
3. Don't use Digital Zoom.
4. Ever!



How to get repeatable *Quality*?

- ⦿ Best image format & Low ISO
- ⦿ Depth of Field - 100% of turning IN FOCUS!
- ⦿ Longer lens makes turning look better
- ⦿ Stabilize
- ⦿ Camera roughly level with turning
- ⦿ *Control the environment*
- ⦿ *Control the lighting*

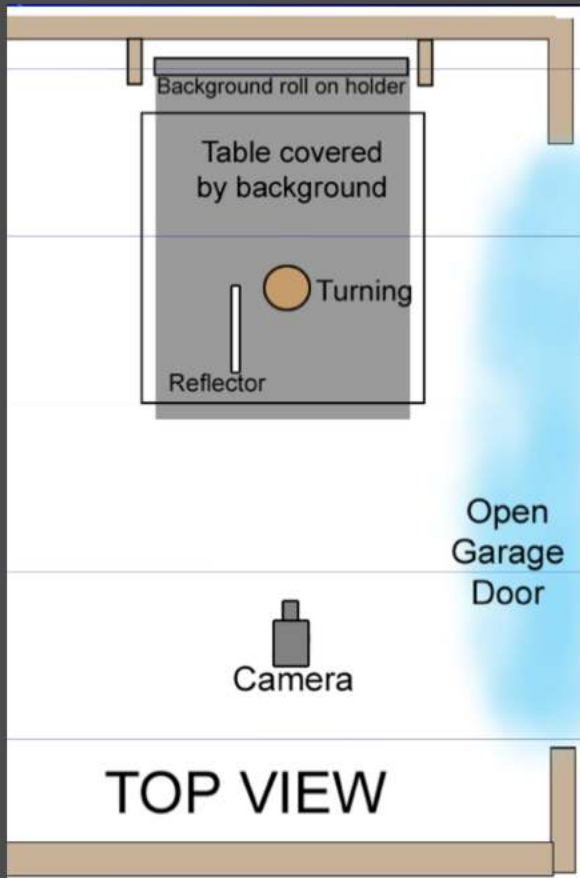
Create Your Own Studio

Dirt-Cheap Method 1

- ⦿ A simple setup outside is all you need
- ⦿ Drape a solid-color sheet over something, or tack it to the wall
- ⦿ Smooth out any distracting folds

Create Your Own Studio

Dirt-Cheap Method 2



- Light Source: Open garage door
- Background: Roller shades work great
- White Board to reflect light
- Move the “reflector” in from the front until the turnings shape is defined
- Setup ... 5 minutes!

Create Your Own Studio

Jamie Donaldson's "Phrugal Photo Studio"

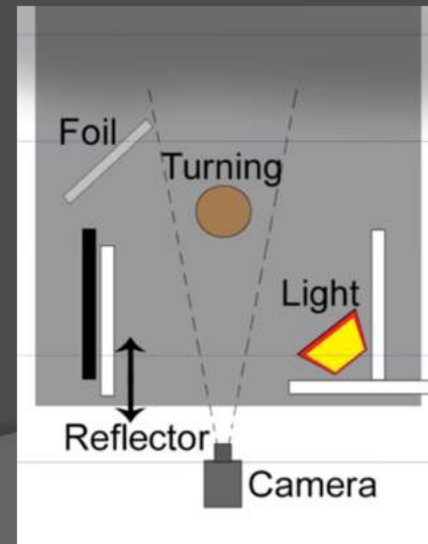
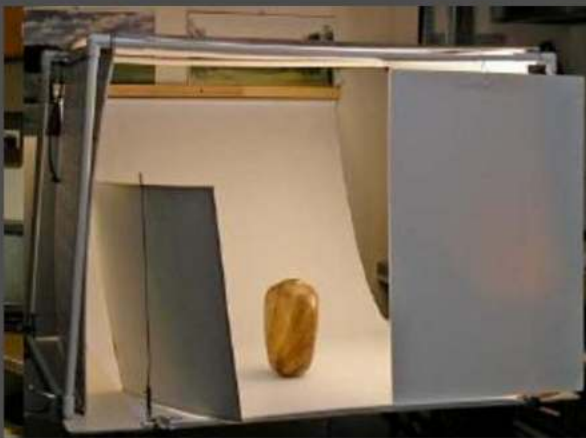


Supplies

- 500W Home Depot Light or Clip-Light with 5000k CFL
- 3 White Foam-Core boards
- 1 Black Foam-Core board
- Aluminum Foil
- Irrigation Supplies

Adjustments

- White reflector is movable to adjust the amount of light bounced
- Foil reflector just out of camera's angle of view
- Plans online & on website



Purchase a “Studio-in-a-Box”

Portable Lighting Studio

CowboyStudio Table Top Photo Studio

Less than \$50.00

Everything need to take professional studio-quality images

16 x 16 x 16 Light Tent with 4 backgrounds

Two 50 watt floor-standing lights

Camera Stand

Includes carrying case

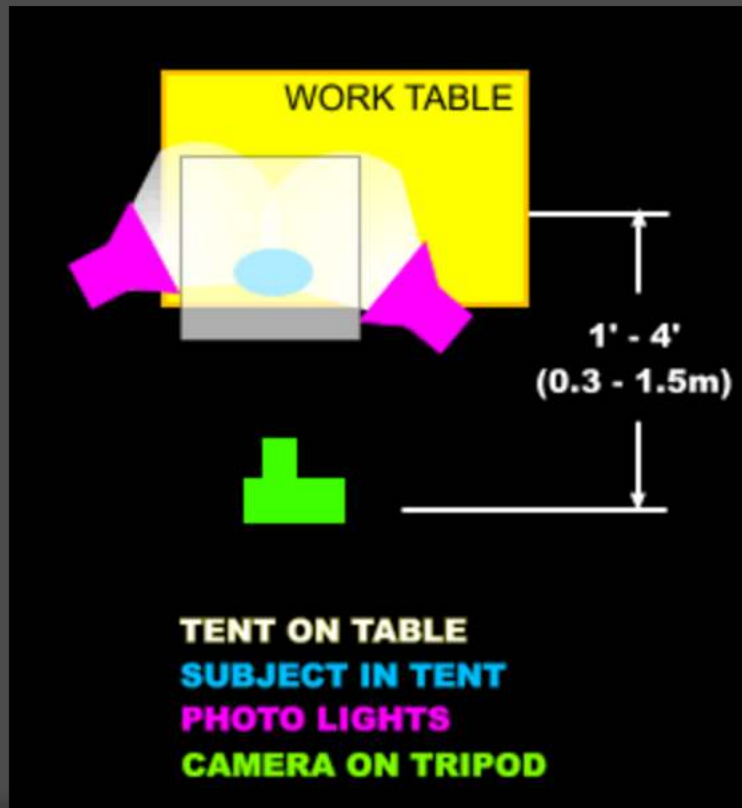


My setup

Cowboy Studio 30" Photo Soft Box Tent
CowboyStudio Tabletop Photo Studio Lighting



Working with a Studio



- Subject Forward
- Lights back



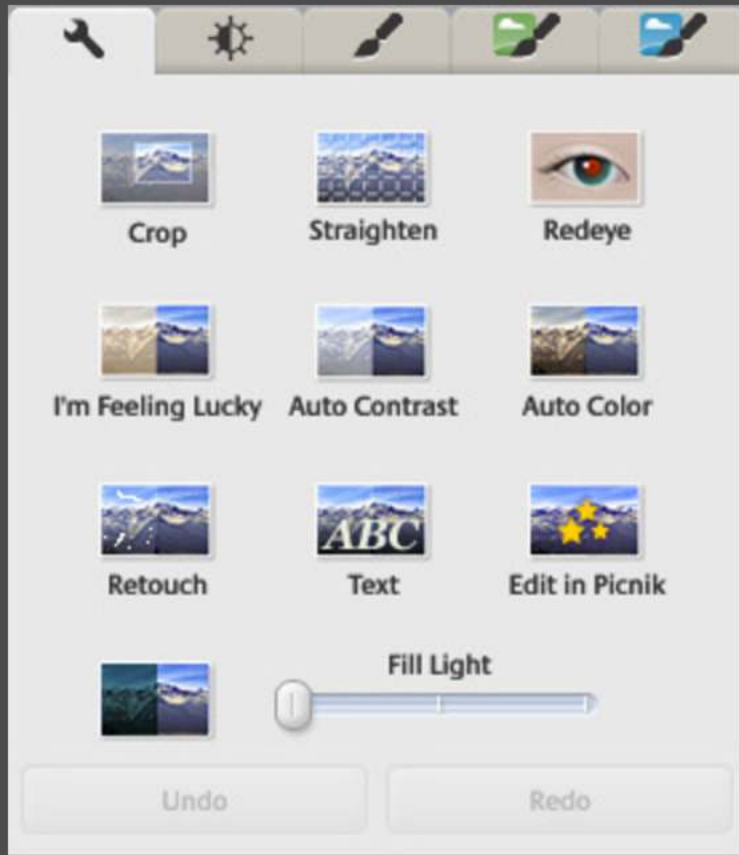
DEMO

Lighting
Aperture Priority
Depth of Field
ISO
Framing
Focal Point
White Balance

PUTTING IT ALL
TOGETHER

Photo Software

Fast, Simple, & FREE!



- Organize
- Crop
- Straighten
- Correct
- Print
- Export

www.picasa.google.com

Photo Software

Professional results



- Less than \$100 @ Costco
- Full image control
- Adjust Lighting & Contrast
- Easily fix imperfections
- Supports TIFF
- Many Filters & Controls
- Layers make it easy to customize pictures

Photo Software

Apple's Aperture

Professional Library & Editing Package



- Import
- Organize
- Compare/Select
- Perfect & Enhance
- Share
- Print



DEMO

Reframing
Color Enhancements
Fixing Blemishes

THE DIGITAL DARKROOM

Putting it all together

- ◉ Know your camera
- ◉ Shoot at best possible quality
- ◉ Aperture & Depth of Field
- ◉ Set White balance if possible
- ◉ Stabilize



Practice, Practice, Practice

- ◎ Bits are FREE!
- ◎ Read your camera's manual!
 - Learn the various features and play around
- ◎ Experiment with lighting
- ◎ Experiment with different backgrounds
- ◎ Experiment with different angles
- ◎ Take lots of pictures
- ◎ Have fun

Questions?

