

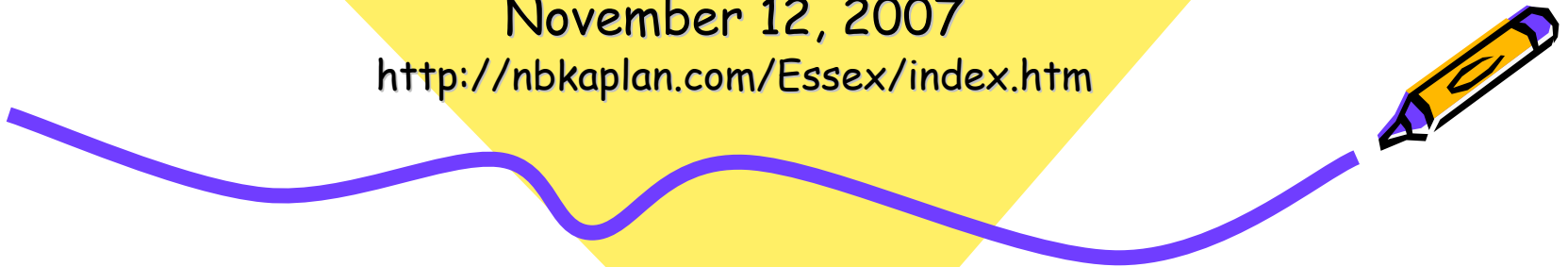


Raw vs Jpeg, Metadata and Digital Workflow

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November 12, 2007

<http://nbkaplan.com/Essex/index.htm>



JPEG

(Joint Photo Experts Group)

- **PRO**

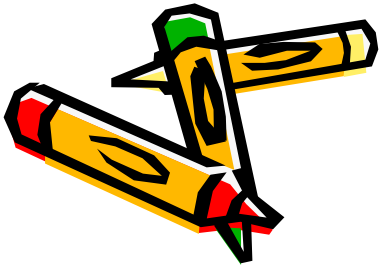
- Universally legible, viewable by all web browsers and image editing programs
- Used by most cameras
- Less post photo tweaking needed - can make adjustments for under or over exposure
- Compressed file save space on the memory card and are faster to up load to the computer (on the Canon an 8 MP file, the Jpeg is 3 MB). JPEG is about 25 to 33% smaller than RAW
- The small file helps the frames per second rate of the camera and is better for the image buffer
- JPEG offer the same image quality as RAW or TIFF



JPEG

- **Con**

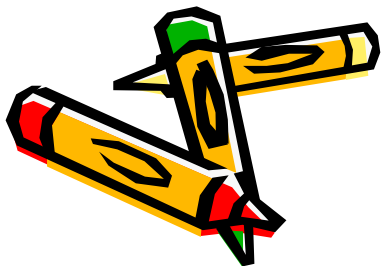
- Highly compressed images and may contain ugly artifacts
- Detail may be lost with repeated saving
- Compressed file can cause detail to be lost
- Uses 8 bit with 256 brightness levels
- The camera decides what data is saved



RAW

(Does not stand for anything)

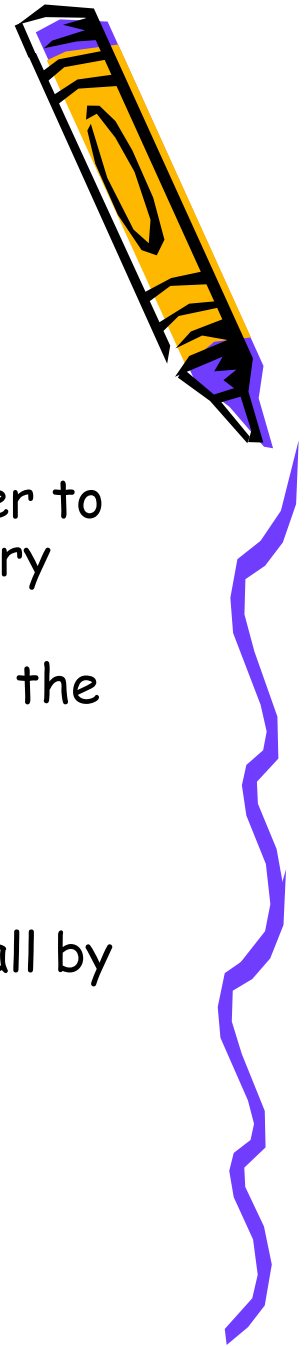
- Pro
 - All the data that your camera records is saved in your RAW file
 - Nothing is converted and nothing is lost
 - Larger files are better to work with (on the Canon an 8 MP file. the RAW file is 7MB)
 - You have more control over the photo and can make corrections to the photo
 - RAW is helpful if the picture was not shot right (Exposure and white balance)
 - Offers potentially greater dynamic range (Helpful in tricky lighting situations), Holds more tonal and color information than Jpeg. More flexibility in how you can work the tones and color in the image
 - Can extract tones and details in bright and dark areas that have no details in Jpeg
 - Uses 12 or 16 bit with 65,536 levels (Jpeg uses 256 brightness levels)
 - White Balance is not set in RAW file



RAW

- **Con**

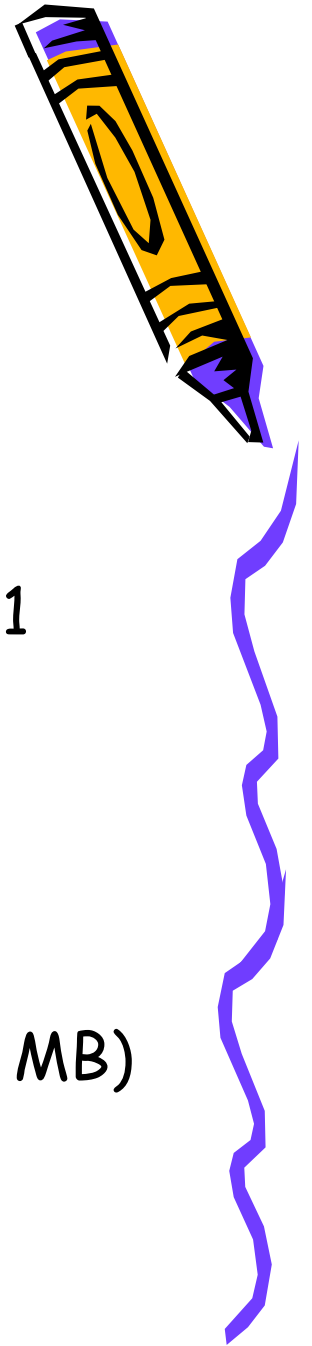
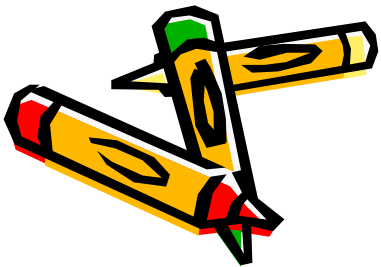
- Files are much larger and will take longer to transfer to the computer and will take more space on the memory card.
- The large files take long for the camera to write to the memory card.
- Each file has to be adjusted and converted for use.
- There is more post photo processing time
- RAW files are proprietary format and they could fall by the wayside, making the photos unusable.
- Some say "limits their pleasure of photography"



TIFF

(Tagged Image File Format)

- **Pro**
 - Great for larger prints
 - Large files (On the Canon 8 MP the file is 11 MB)
 - Can store Photoshop levels
- **Con**
 - Not supported by web browsers
 - Large files (On the Canon an 8 MP file is 11 MB)

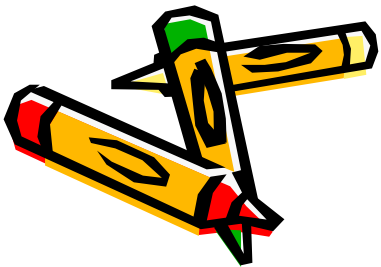
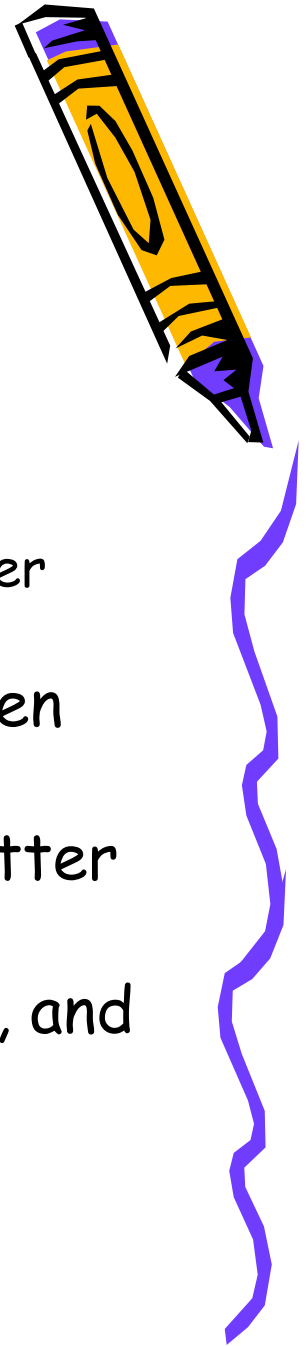


"JPEG is an amateur
format and RAW is a pro
format."



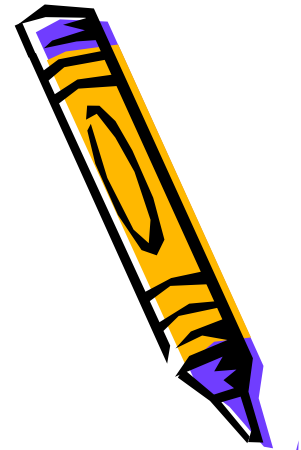
"Is RAW the Pro Format?"

- "Is RAW the Pro Format?" by Rob Sheppard, Outdoor Photographer, September 2004.
 - Rob is a pro photographer for Outdoor Photographer Magazine.
- He felt that the new cameras JPEG have gotten so good that he only uses JPEG.
- He felt the unprocessed JPEG files looked better than the unprocessed RAW file.
- He felt that JEPGE had a greater tonal range, and dealt better with the noise.



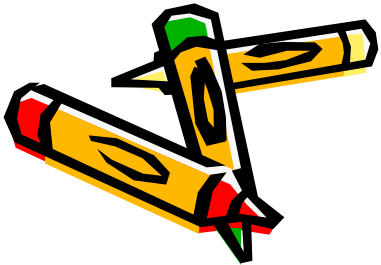
Should you shoot RAW or JPEG?

- This depends on how you like to work.
 - Do you want to spend time processing the photos?
 - Are you good at getting the exposure right?
 - The quality of JPEG is almost as good as the RAW format. Most people will not be able to tell the difference.
 - If you are just working with 4 X 6 photos than JPEG is fine for you.
 - If you are thinking about photos larger than 11 X 14 than you may want to use RAW.
 - If you are doing action photography you may want to use JPEG.
 - If you are shooting in areas that the lighting might be a problem, you may want to use RAW.



Adobe DNG files (Digital Negative)

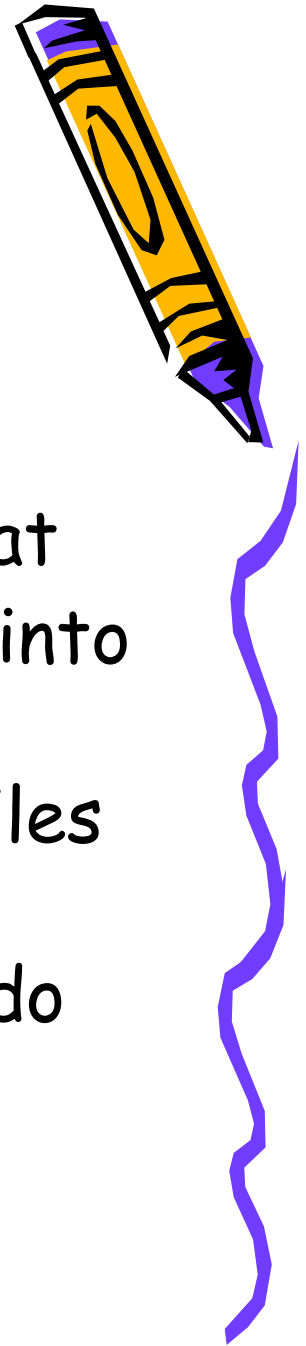
- Pro
 - The file size is smaller than RAW files
 - DNG will maintain all the RAW data
 - DNG file format will be around for a long time (As per Adobe) The file size is smaller than RAW files
 - DNG will maintain all the RAW data
 - DNG file format will be around for a long time (As per Adobe)



Adobe DNG

- Con

- People are slow to move to this format
- The camera makers have not bought into this format
- You will need to convert your RAW files to DNG
- You will need additional software to do the conversion



Adobe Digital Negative Converter



1 Select the images to convert



Select Folder...

No images have been selected

Include images contained within subfolders

2 Select location to save converted images



Save in Same Location

Select Folder...

Preserve subfolders

3 Select name for converted images

Name example: MyDocument.dng

Document Name [dropdown] + [dropdown] +
[dropdown] + [dropdown]

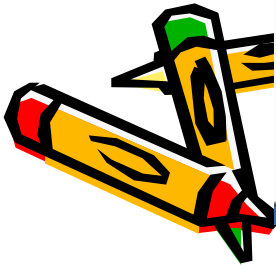
Begin numbering: [input]

File extension: .dng [dropdown]

4 Preferences

- JPEG Preview: Medium Size
- Compressed (lossless)
- Preserve Raw Image
- Don't embed original

Change Preferences...



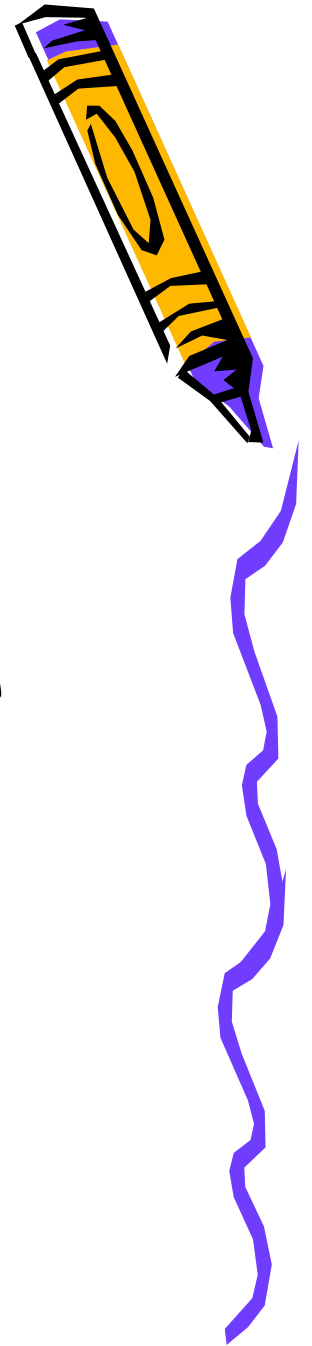
RAW Demo



Is Photoshop cheating?

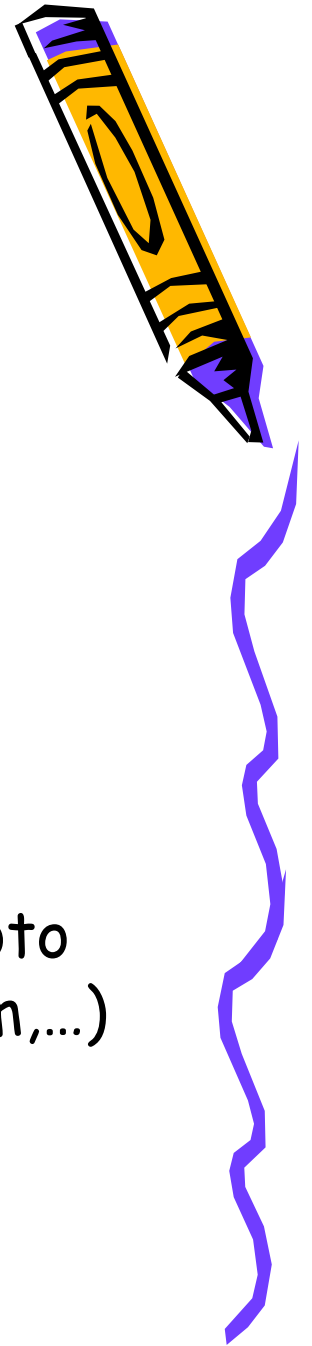
- "Dodging and burning are steps to take care of mistakes God made in establishing tonal relationships."

-Ansel Adams



Metadata

- There are two types of metadata
 - EXIF Data
 - EXIF Data is data created by the camera and embedded in the original file.
 - Metadata
 - Data that can be added by the photographer
 - This data can be seen with many of the photo programs. (Photoshop, Aperture, Lightroom,...)



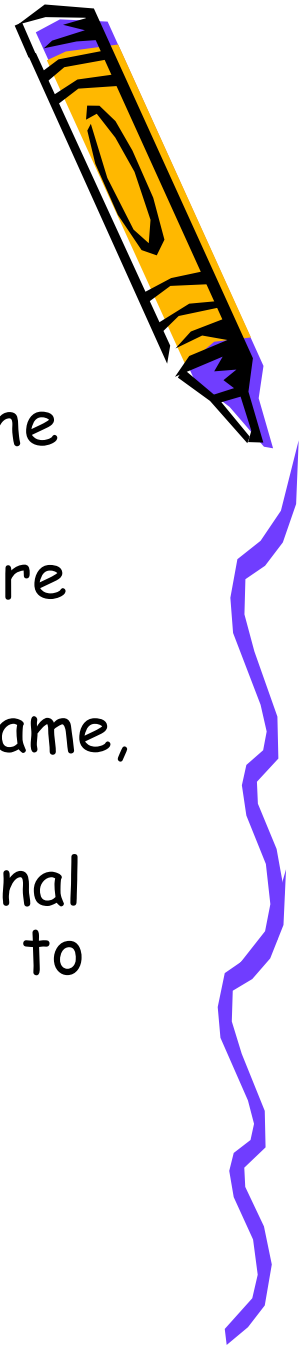
EXIF Data

- Date: 8/1/2007
- Time: 10:13:23 AM
- Model: Canon EOS 20D
- Serial #: 820412558
- Firmware: 2.0.3
- Frame #: 9639
- Lens (mm): 80
- ISO: 800
- Aperture: 4
- Shutter: 1/8000
- Exp. Comp.: -1.0
- Flash Comp.:
- Program: Aperture Priority
- Focus Mode: One Shot AF
- White Bal.: Auto
- ICC Profile: Adobe RGB (1998)
- Contrast: 1
- Sharpening: 0
- Quality: Raw



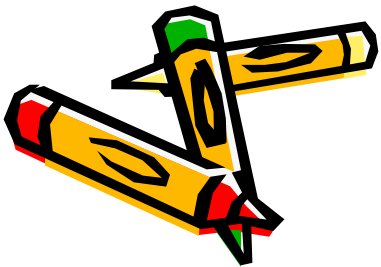
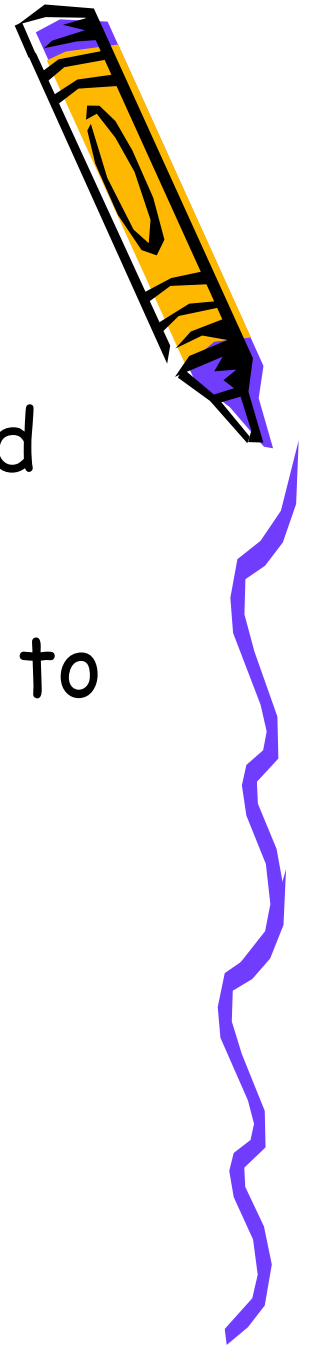
Metadata

- This is data that is added to show who owns the photo and how to contact the owner.
- This could be anything from your name to where the photo was taken.
- The metadata that you should enter is your Name, Contact Information and Copyright Status.
- It is believed that less than 50% of professional photographers are adding basic metadata info to there files.

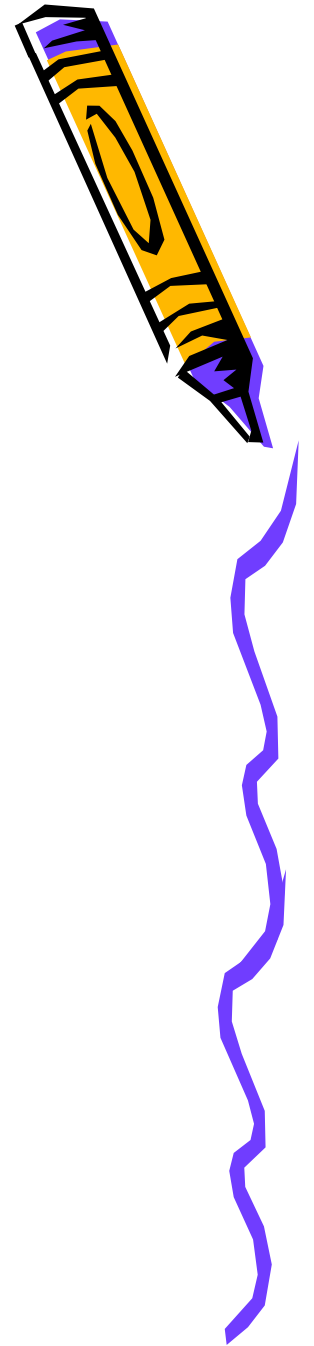


Metadata

- Photos without metadata are called **Orphans**.
- Without metadata there is no way to contact the owner of the photo.

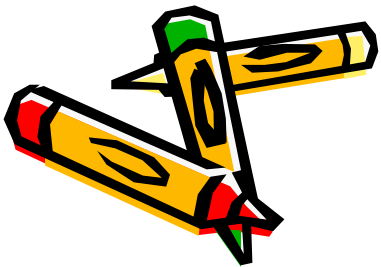
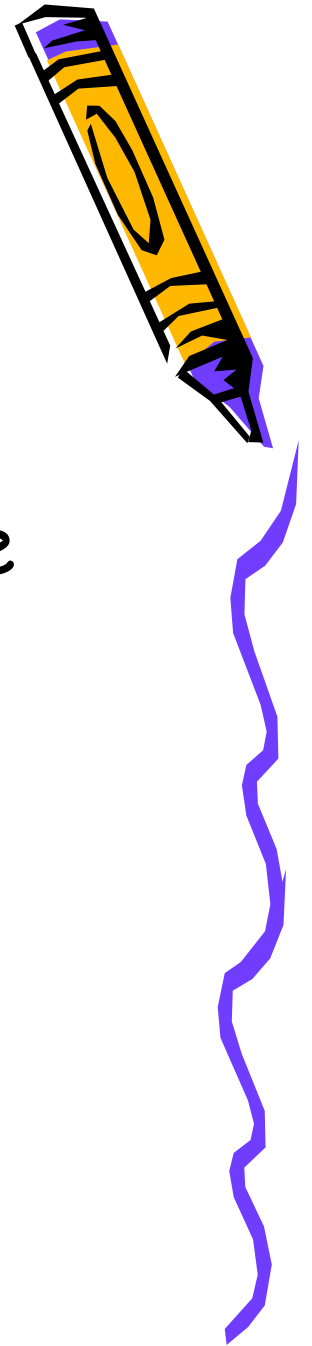


Metadata Demo



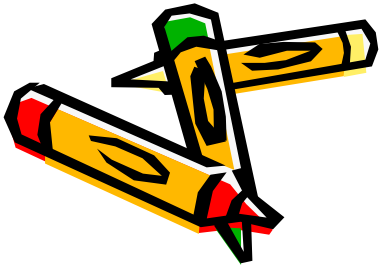
Digital Workflow

- There is no right or wrong. The workflow that works for you is the right workflow.



Digital Workflow

- Here is a suggestion
 - Camera
 - Batteries
 - Memory Cards
 - Camera Settings (ISO, White Balance, JPEG, RAW, etc)
 - Have you reset them?
 - Shoot
 - Upload photos (add metadata)
 - Transfer photos to computer, Name the folders, Review the photos
 - DELETE Junk
 - Monitor Calibration



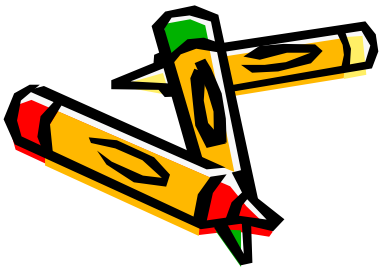
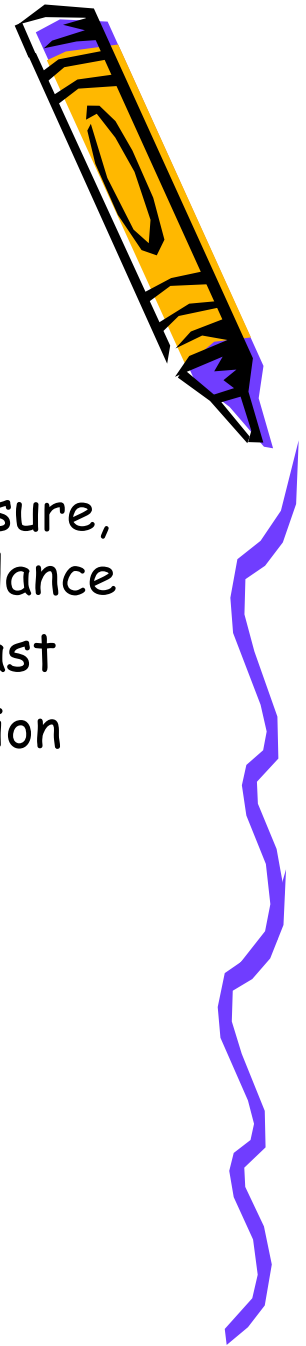
Digital Workflow

- **Workflow A**

- i. Crop / Resize
- ii. Adjust for Exposure, Tone and white balance
- iii. Color and contrast
- iv. Correct saturation
- v. Sharpen
- vi. Metadata
- vii. Print

- **Workflow B**

- i. Adjust for Exposure, Tone and white balance
- ii. Color and contrast
- ii. Correct saturation
- iv. Resize / Crop
- v. Sharpen
- vi. Metadata
- vii. Print



Digital Workflow

- Printing
 - Printer drivers installed and up to date
 - Set for the correct paper
 - Heads are clean
 - Printer calibrated
 - Let prints dry
- Saving files
 - You must have some way to save your photos other than on the computer hard drive.
 - Hard drives fail!!!!
 - Consider: DVDs, External Hard Drives, A Second Computer, Online services.
- Ready for the next photo shoot

