Digital Image Formats

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Building Block

- Everything digital relies on pixels
- Pixels are like a huge “family” that photographically speaking is at the core of every recorded image
- Derived from the words picture and element; pixels are responsible for every digital image ever made

Families not the Same

- Every camera has a pixel family but not all families are the same size
  - 3 million to 16 million strong
- Size does matter!
- Each pixel has a seat in the “house” and is assigned a specific task – to record info from a specific spot of light

Happy Family

- Each pixel responds to the light that strikes it then as one happy family they all, at the same time perform a complicated mathematical calculation which is converted to an image by the onboard image processor
- Individually, one pixel cannot record an image

Strength in Numbers

- The “family” relies on each pixel member to do the job it is assigned to do
- 8 million pixels can gather up more sharpness, contrast and colour than 4 million can

Processing

- Digital imaging gives you the choice of processing your image into one of three formats
- The chosen format affects:
  - The immediate outcome of the image clarity, detail, contrast and colour
  - The long-term stability of the image

Three Main Formats Used

- In digital photography there are 3 main image formats used
  - Jpeg
  - Tiff
  - RAW Mode
- Each format is assigned a specific file size

What Does That Mean?

- So you take pic of someone that is made up of 6 million pixels
- That image is sent to the image processor to be processed as jpg or tiff (raw is not processed right away)
- Jpg is a small file, RAW is a medium file and tiff is a large file

Memory Card

- The number of pics you can store on your memory card will vary depending on the file type
- Example:
  - A 1 gig card in a 6 meg camera can store approx. 424 jpg, 124 raw and 59 in tiff

Jpeg

- Have 3 options – fine, normal and basic
  - Fine captures the most detail
- Jpegs are lossy files which means that jpgs begin to loose original data
- Every time that image is viewed, bits of the data are lost so over time the image is corrupt and useless

Jpegs and Compression

- Because jpgs are compressed they are like listening to your favorite rock or rap radio station in AM – not so great
- It does not capture every tiny detail of colour and contrast – it takes a shortcut and averages out the “like” colours and “like” contrast, then compresses it so it is a small file

Compression Results

When to Use jpegs

- Sharing pics via the internet
- Long term use not an issue
- Standard image size – no intention of making large posters with images
- Personal instead of professional use

Tiff

- Tagged Image File Format
  - This is the Final Forever!
- Once a tiff, always a tiff
- Maintains all original image detail regardless of the number of alterations
- Picks up every detail and colour in your scene

Tiff File Size

- Biggest! From 17 meg to 60 meg per image
- Although amazing… difficult to make changes at the core… it is a permanent record of the image as taken
- Not the perfect solution after all!

RAW images

- Not an acronym for anything – RAW is RAW
- Can change the exposure up to 2 stops

- Can change white balance, colour temperature
- When done, save as with the changes and the original stays the original

The Best

- RAW captures the most detail, contrast, etc. when shooting
- Provides the most flexibility for editing post production
- Not a “lossy” file format – will retain original image data

Long Term Storage

- Converting your favourite images into Tiff format for long term storage is recommended
- Images use in a portfolio should be saved in tiff format

Quick Look At Light

- Colour Temperature is measured in Degrees Kelvin
- We don’t see the subtle differences because our brains balance it out
- As colour temp increases it moves from red to blue

Camera Light Settings

- **Auto** (the default) works in a wide variety of lighting conditions.
- **Daylight** is best when photographing outdoors in bright sunlight. When photographing indoors, if you like the warm glow of incandescent lights, you can capture them with this setting.
- **Cloudy** is best when photographing outdoors in cloudy or overcast conditions.
- **Incandescent or tungsten** is best when photographing indoors under incandescent lights.
- **Fluorescent** is best when photographing indoors under fluorescent lights.
- **Flash** is best when photographing with flash. In fact, flash is daylight balanced so it's an ideal way to remove color casts in some lighting situations.
- **Manual** lets you set white balance manually by aiming the camera at a piece of white paper.

Lighting Trick

- For rich saturated colours try setting your camera to cloudy +3 and test your results
- Remember that if you are shooting in RAW format you can easily change your White Balance settings post production

Questions?