# DIGITAL PHOTOGRAPHY INTRO PLUS
Week #4 of 6 Flash, White Balance, Digital Sharpening, Artistic Filters, Black and White

Flash

In camera flash. Flash dissipates very quickly over distance. Double the distance from camera to subject and you get ¼ the flash power (not ½). Built in flash units on typical consumer cameras are useful only if the subject is 4 feet to 12 feet away from camera.

On camera flash. Many (not all) digital cameras will allow you to purchase and use a more powerful flash. These are typically attached to a "hot shoe" on the camera. Typically 8 times more powerful than an in camera flash, allowing use from 4 feet to 60 feet.
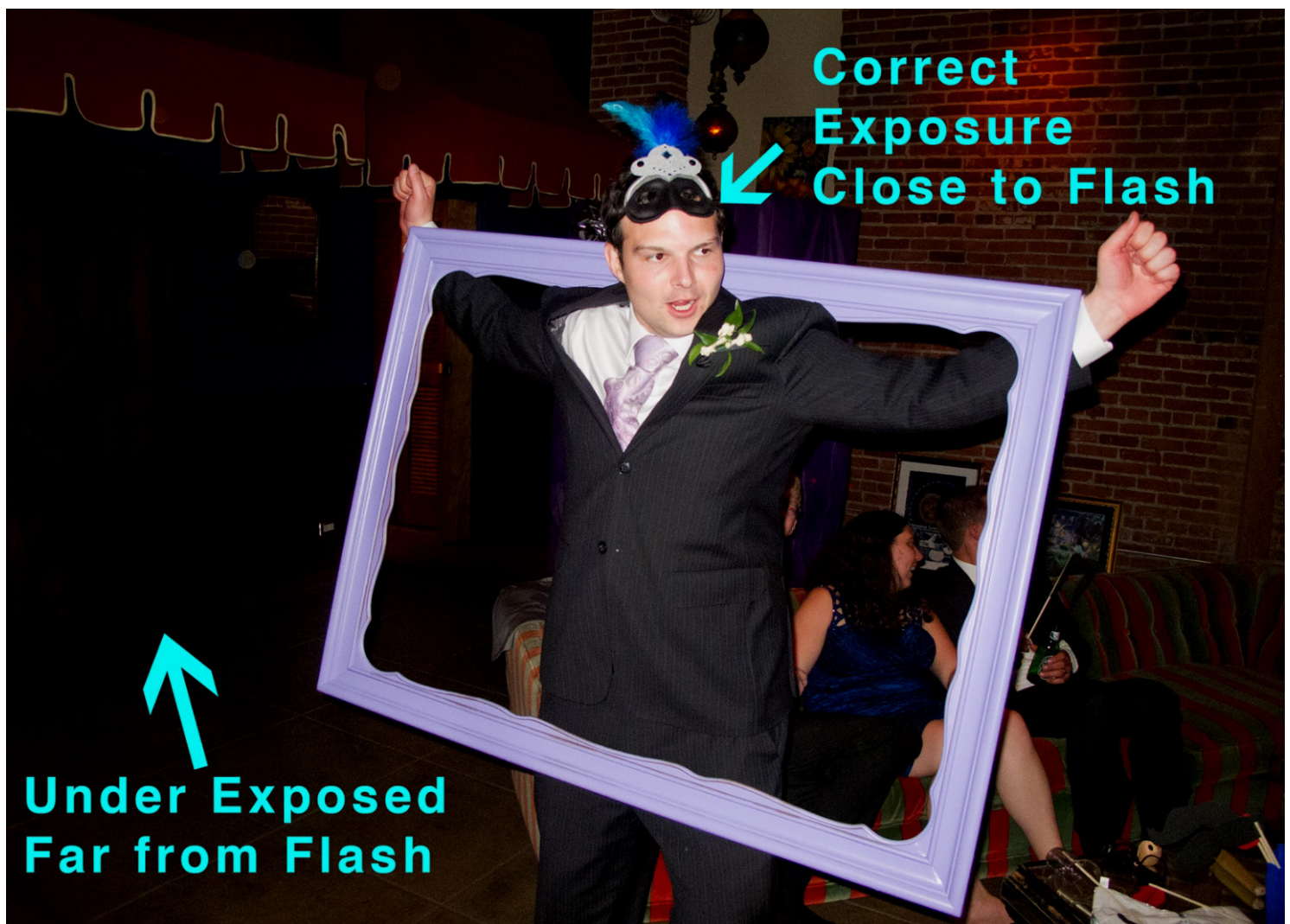
TTL automatic versus manual flash on camera flash. TTL flash must be "compatible" with your camera and then it allows the camera to set correct exposure. Use a manual flash and you will need to manually set the exposure for each image.

Your camera's sync speeds. One place where the inexpensive cameras often outperform the expensive cameras! Sync speed is the fastest shutter speed you can use when a flash is being used. On many simple consumer digital cameras there is no limit (use any shutter speed you want). Some prosumer digitals cameras are limited to 1/500 (use 1/500 or any speed slower). Top end professional DSLR cameras are typically limited to 1/200 (use 1/200 or any speed slower).

Daylight fill flash. Most people think of flash only for night or dark indoor images. An overlooked flash use is to "fill" in shadows in an outdoor daylight image. Just turn on your automatic (in camera or TTL on camera) flash and shadows on "near to camera" subjects will be significantly reduced.

Camera White Balance

Color of Light. Perhaps you've seen a lighting display at a hardware or interior design store showing that different light bulbs have different colors. Sunlight is actually blue light, regular light bulbs (incandescent) are rather orange and most fluorescent tubes are green. In the real 3D world or brains "fix" this for us, we don't "see" these colors. In a 2D photograph we do!

White Balance in camera. Digital cameras can be set any of three ways to fix this problem. Auto white balance tries to read the color of light and adjust the camera without your input. It works reasonably well, but can be fooled in odd situations (a room with bright colored walls, snow, a room with strongly colored lights such as a stage production). Manual white balance is used when you want to tell the camera what color light exists. If color on a ski slope fools your auto white balance, you would switch to manual white balance and select sunlight. Custom white balance (may not be available on simpler cameras) lets you make and use your own personal versions of manual settings. Very useful in situations where you have 2 or more light sources mixed together (blue sunlight coming in a window mixing with green florescent lights in the room).


White Balance in image editing software. It is possible to "fix" an imperfect white balance in software after the image is taken. See below for image editing software part (3 color correction). Because this is time consuming and often confusing, it is best to get color as close as possible in the camera first, rather than try and "fix it" later in software.

Image editing software part 4 (sharpening, filters, black and white)

Sharpening helps almost all digital photographs and is usually needed after a size change.

1. Launch Photoshop Elements 2020, if needed.
2. Select "Photo Editor", if needed.
3. Open image 4-5-sharpen.jpg (File > Open). You will see image on your screen.
4. Make sure you are "Edit Full" rather then "Edit Quick" mode (Elements specific command, in upper right of screen).
5. Set your size and resolution (Image > Resize > Image Size, If needed).
6. Open Enhance > Unsharp Mask.
7. Set "Amount" visually. Typically between 40 and 125%.
8. Set "Radius". Typically 0.7 for web/email or 2 for high resolution (240dpi inkjet) images.
9. Set "Threshold" visually so that areas of similar tone are not "chunky looking". Skin tones or open skies are good places to check. Typically set between 2 & 20.
10. Save your new corrected file as a new file/name (File > Save As) to a location on your hard drive (not your camera's memory card).
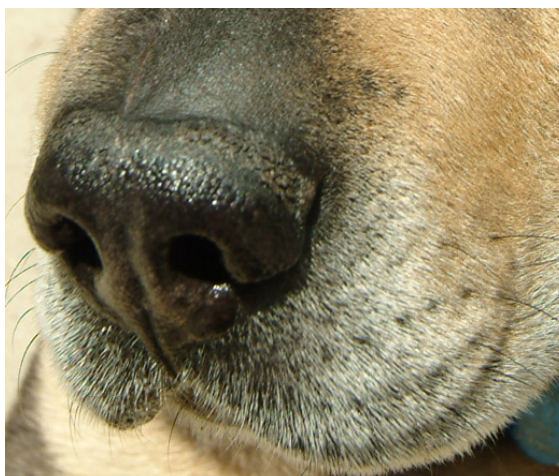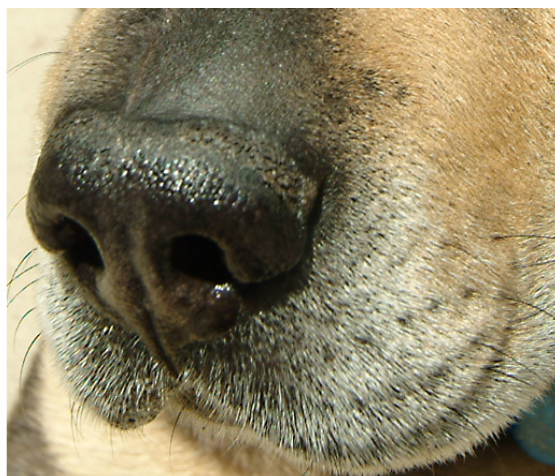

Direct from camera   *Sharpened*

"Artistic" filters offer numerous chances for "fun" photographs and/or "paint media" imitations.

1. Launch Photoshop Elements 2020, if needed.
2. Select "Photo Editor", if needed.
3. Open image 4-5-sharpen.jpg (File > Open), or hit "Edit > Revert" to get original file. You will see image on your screen.
4. Make sure you are "Edit Full" rather then "Edit Quick" mode (Elements specific command, in upper right of screen).
5. Go to Filers > Artistic > Colored Pencil.
6. A browser will open showing thumbnails of 15 artistic filter possibilities. Click on the thumbnail you like best and then adjust the sliders to your liking. There are no set rules here, just play!
7. Save your new "artistic image" as a new file/name (File>Save As) to a location on your hard drive (not your camera's memory card).
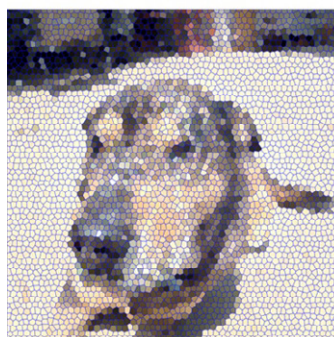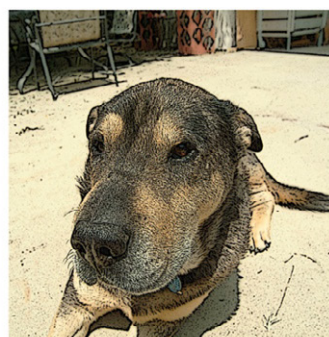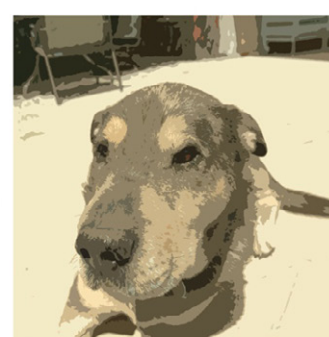

Stained Glass
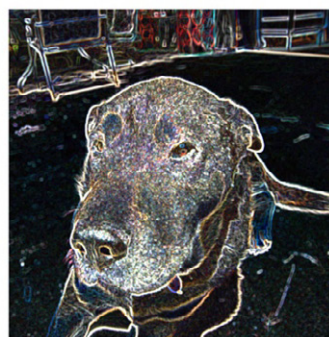
Glowing Edges

Graphic Pen

Poster Edges

Pallet Knife

Cut Out

Black and white conversions
1. Launch Photoshop Elements 2020, if needed.
2. Select "Photo Editor", if needed.
3. Open image 4-5-sharpen.jpg (File > Open), or hit "Edit > Revert" to get original file. You will see image on your screen.
4. Make sure you are "Edit Full" rather then "Edit Quick" mode (Elements specific command, in upper right of screen).
5. Go to Enhance > Adjust Color > Adjust Hue & Saturation.
6. Make sure the "Edit" is set to "Master", "Colorize" is unchecked and "Preview" is checked.
7. Move the "Saturation" slider to -100 for true black and white.
8. Save your new "black and white image" as a new file/name (File>Save As) to a location on your hard drive (not your camera's memory card).

"Toned" black and white conversions
1. Launch Photoshop Elements 2020, if needed.
2. Select "Photo Editor:, if needed.
3. Open image 4-5-sharpen.jpg (File > Open), or hit "Edit > Revert" to get original file. You will see image on your screen.
4. Make sure you are "Edit Full" rather then "Edit Quick" mode (Elements specific command, in upper right of screen).
5. Go to Enhance > Adjust Color > Adjust Hue & Saturation.
6. Make sure the "Edit" is set to "Master", "Colorize" is CHECKED and "Preview" is checked.
7. Move the "Saturation" slider to 25.
8. Move the "Hue" slider until you like the tone (note: Sepia is around 40).
9. Readjust the "Saturation" slider until you like the image.
10. Save your new "toned black and white image" as a new file/name (File>Save As) to a location on your hard drive (not your camera's memory card).

Original   Black and White   Toned

Computer and screen color management

Computers use color spaces and tags to describe the color field and its limits. sRGB is most common space used in consumer gear. sRGB is always used for email or web viewing. AdobeRGB is an example of a larger color space. Larger color spaces contain more extreme colors. Your camera gear most offer a larger space for it to be useful. Windows XP lacks a color management panel (Macs include colorsync), consider this add on:
www.microsoft.com/windowsxp/using/digitalphotography/prophoto/colorcontrol.mspx

Calibrating a computer screen, at the very least:

1) Set the correct monitor profile (select the profile with your monitor's name on it):
Windows XP: Start > Control Panels > Display > Settings > Advanced > Color Management
Windows Vista and 7: Start > Control Panels > Color management > Devices > Select Monitor
Mac OSX: System Preferences > Displays > Color

2) Set your monitor to 6500K and Gamma 2.2. These setting often found on your monitor's (not your computer's) menu. Some flatscreens and laptop screens are pre set and non adjustable.

3) Run the brightness and contrast calibrations on my homepage:
http://www.ferguson-photo-design.com/

Calibrating a computer screen, the better and more expensive way. Use a hardware "spider" that measures your monitor and creates a custom profile. This is the best method, but more than most non-pro photographers choose to do.

1) Read typical instructions for using a calibration spider:
http://www.booksmartstudio.com/color_tutorial/monitors.html

2) Read reviews for available hardware
http://www.drycreekphoto.com/Learn/monitor_calibration_tools.htm

3) Buy and use a calibration "spider".

HOMEWORK (in two parts, 3 prints):

Part #1: Shoot one indoor (large room) or night scene including a close subject and distant background. Use an on camera flash as the primary light source and your camera's highest sync speed.
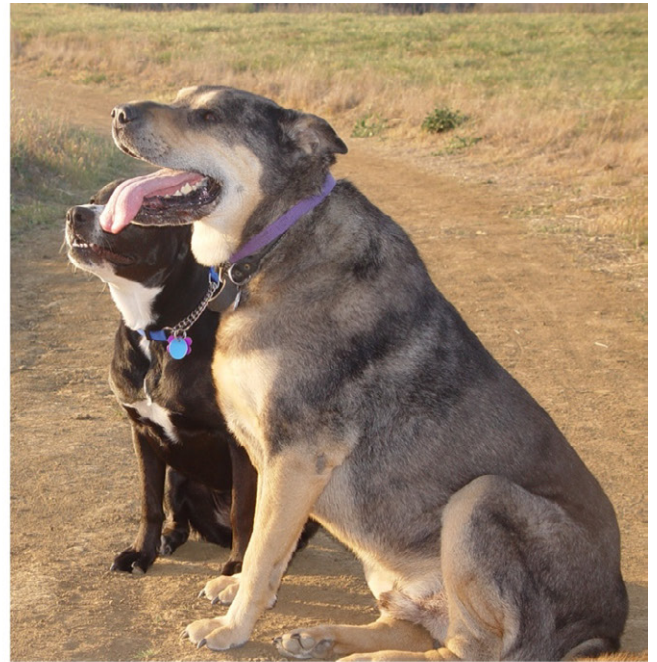
Part #2: Shoot a daylight scene two ways, with daylight flash fill and without.

Flash as primary light. Notice dark background.

Harsh sunlight. Direct sun on Dogs' right make deep shadows on Dogs' left. Camera in Program Mode chose 1/125 at F/4 trying to hold both white fur highlights and black fur shadows.

Turning on Forced Flash allowed us to "Daylight Fill" our subjects. They are now more evenly exposed, without the deep shadows. Notice that the distant grass is not affected.