WORKING WITH COLOR

- Color models
- Color model restrictions
- Color depth
- Color tools and mixers
- Color harmonies
- Color shifts

DIGITAL COLOR

Basic Color Needs:
- Harmonize to balance, and, contrast to differentiate
- Relate to the subject and/or convey the mood
- Be within the range (gamut) of the output model (e.g., to print accurately)

COLOR MODELS:
RGB VS. CMYK

- CMYK:
  - Mixes subtractively
  - Used for printed media
- RGB:
  - Mixes additively
  - Used for screen and light based media
Photoshop will let you...

- convert your document between color modes
- mix in any model and automatically convert
- see colors that are “out of gamut”

**COLOR CONCERNS**

- RGB & CMYK each contain some colors that cannot be reproduced in the other model
OUT OF GAMUT

- CMYK colors can be checked via gamut warnings in the color palette
- Use the hazard triangle to correct

COLOR CONCERNS

- RGB & CMYK each contain some colors that cannot be reproduced in the other model
- Every device has a slightly different color space (e.g. what you see on the screen doesn’t always match what prints)
- Hardware can only represent color as well as the quality of the color management
- There’s no truly universal system for screen-based color

COLOR MANAGEMENT

- Use models, profiles, and hardware adjustments to try to maintain consistent color interpretation
COLOR MANAGEMENT

What is true color?
- Equal parts of red, green, and blue make grey

COLOR PROFILES

The ideal color space - your working space

Example Profiles:
- sRGB
  - based on colors that can be seen on the average screen
  - good for web/screen graphics
- Adobe RGB
  - good for desktop printers
  - good for commercial printers

PHOTOSHOP & COLOR MANAGEMENT

- Color settings can be adjusted per document
- Color profiles can be assigned and/or converted
- Color profiles can be screened
COLOR MANAGEMENT HINTS

- Set your color working space before working on a document (EDIT > COLOR SETTINGS)
- Turn profile warnings on to remind you to change your working space (EDIT > COLOR SETTINGS)
- Use formats that save a profile when possible

COLOR DEPTH (BIT DEPTH)

What is color depth (bit depth)?

- The number of bits used to represent the color of a single pixel in a bitmapped image

COLOR DEPTH

BIT DEPTH

- 1-bit color = $2^1 = 2$ colors = black and white
- 2-bit color = $2^2 = 4$ colors = grayscale
- 8-bit color = $2^8 = 256$ colors = early color monitors
- 24-bit color = $2^8 \times 3 = 16,777,216$ colors = TrueColor

TrueColor:
- 8 bits per channel (8 bits for Red, 8 bits for Green, 8 bits for Blue) = 24-bit color;
- 8 bits per channel including an alpha channel = 32-bit color
CHOOSING COLOR

Don’t leave it up to the computer, or use the default swatch colors!

CHOOSING A COLOR PALETTE

- Colors should not be random
- Amateur design can often be identified by color ignorance; Uninformed color usage often looks haphazard, random, and overdone
- Keep it simple (use a simple color palette)

CHOOSING A COLOR PALETTE

The artist’s color wheel can be used as a guide to selecting harmonious color combinations

- monochromatic
- analogous
- complementary
- split-complementary
- triad

CHOOSING A COLOR PALETTE

COLOR TRENDS & PRE-MADE PALETTES

- Web Trends
- Print/Magazine Trends
- Color Index book
SAVING YOUR PALETTE AS SWATCHES

Swatches palette can be organized for each image or project
- Individual swatches can be added, deleted, organized
- Swatches can be saved and re-opened in another document (.aco file) - cross-document color matching
- Swatches can be downloaded

TOOLS
Targeted color changes, large color shifts, & color corrections

PAINTING COLORS

- Don’t forget about the basic ways to change color!
  - brush
  - fill
  - sponge

HUE/SATURATION

- Adjust a layer or a selected area with a hue/saturation adjustment layer
COLOR BALANCE

Shift and correct colors with color balance
- As an adjustment layer
- Using variations (prior versions of Photoshop only, or via plugin)

CURVES COLOR

- Individual color channels can be adjusted precisely for different values within the image

REPLACE COLOR

Image >> Adjustments >> Replace color
1. Click on the color in the actual image (not the replace color window) you want to replace
2. Adjust the tolerance or range of the color being replaced - use the fuzziness slider, and, the add (+) and subtract (-) droppers
3. Select the new color - use the sliders, or, the resulting color swatch (click to choose)

SUMMARY

- Use Color Management! - the correct model, color profiles, and hardware adjustments
- Choose your color wisely - use the color wheel or pre-made design palettes and keep it simple