Color's Contribution to Telling Your Story

Announcements from Barbara. . .

This Week's Assignment

- Create your story board. Photograph it to present in the next class
- Examples of Viewpoint and Perspective included in your 3-5 images

Color – Black & White - Composites

Human Eye

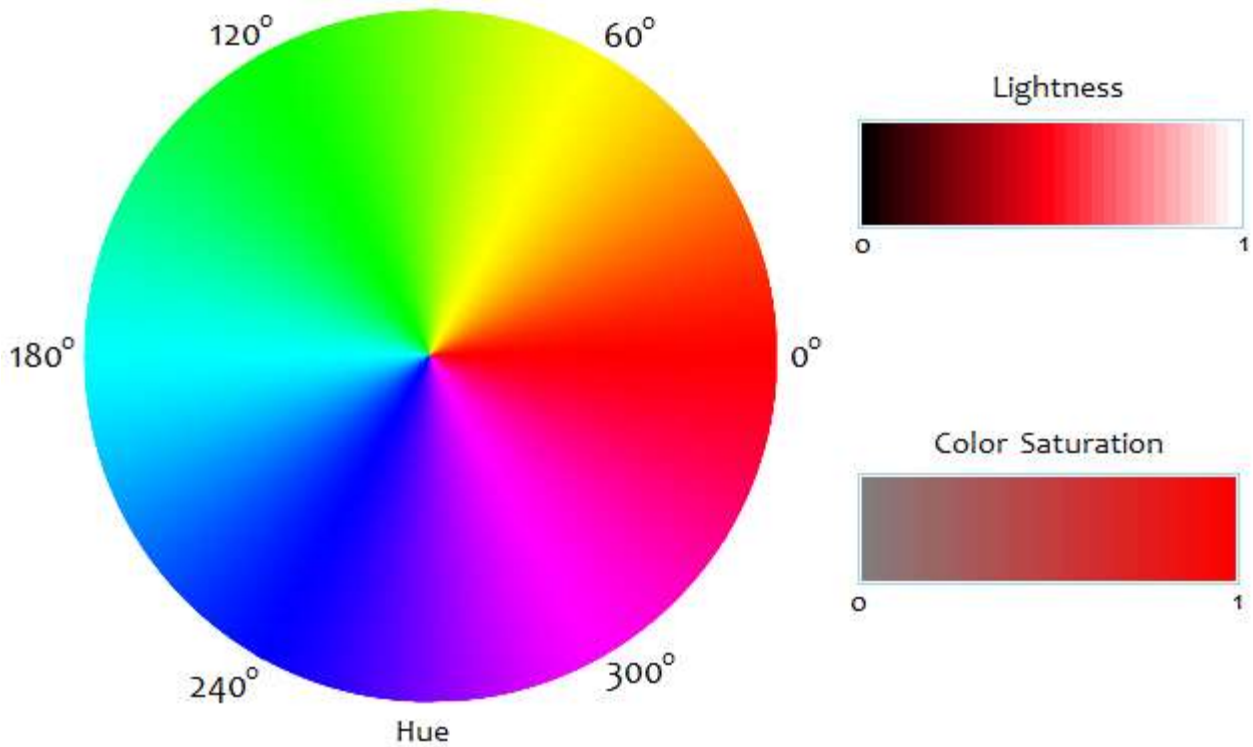
- Can distinguish between 16 million hues in the color spectrum
- Elements (cones) see Red, Green and Blue – very convenient for photographers
- Cameras record RGB (also convenient)
- Monitors project in RGB(W) (also convenient)

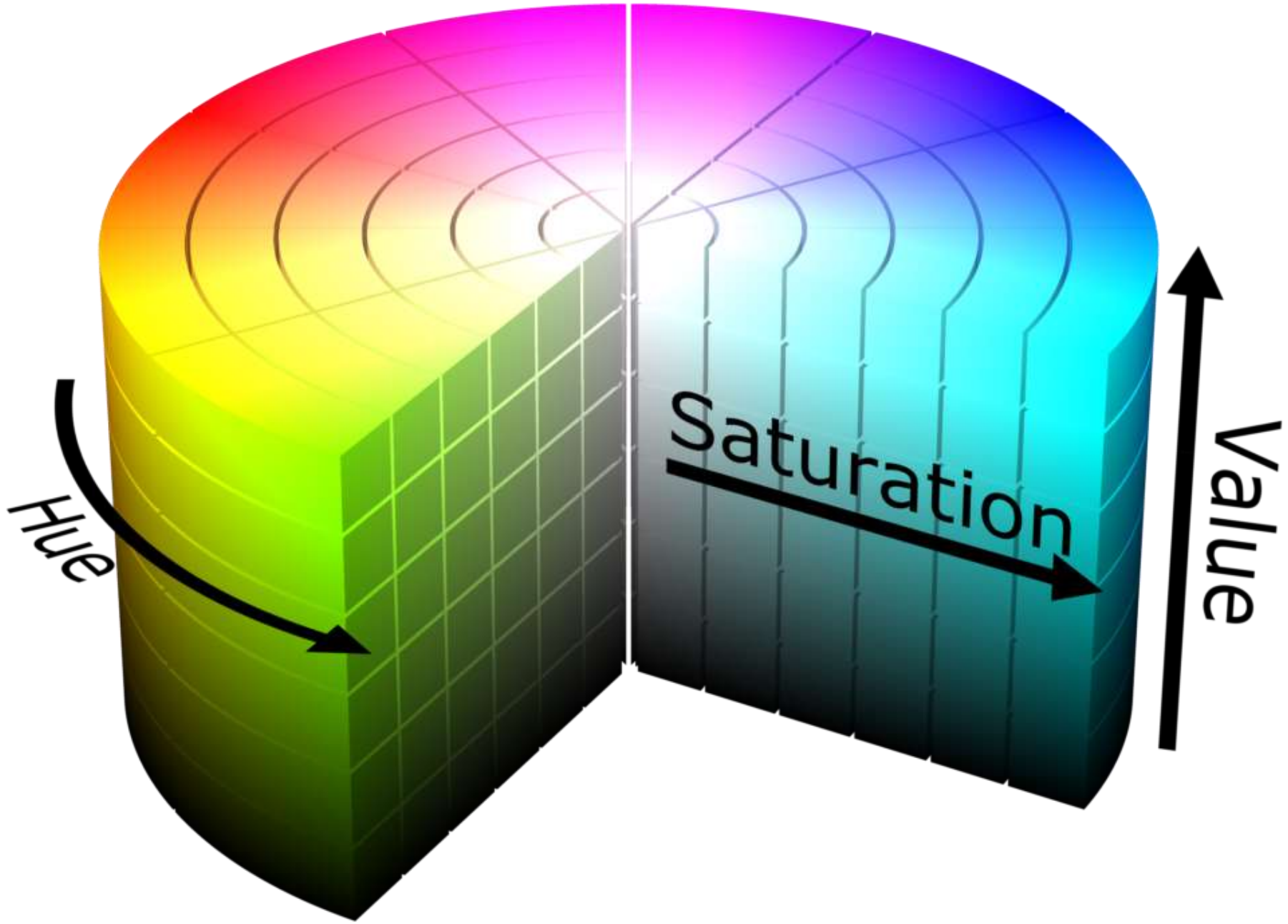
- BIG Problem:
  - Printers (Commercial and Photographic) print in CMYK
  - Very inconvenient-leads to many printing challenges for photographers

Basic Color Attributes/Descriptors

- Hue: The base color tone at its most saturated state
- Lightness/Value: Light to Dark Tones from White to Darkest
- Saturation: Intensity/Vibrance

  = Color

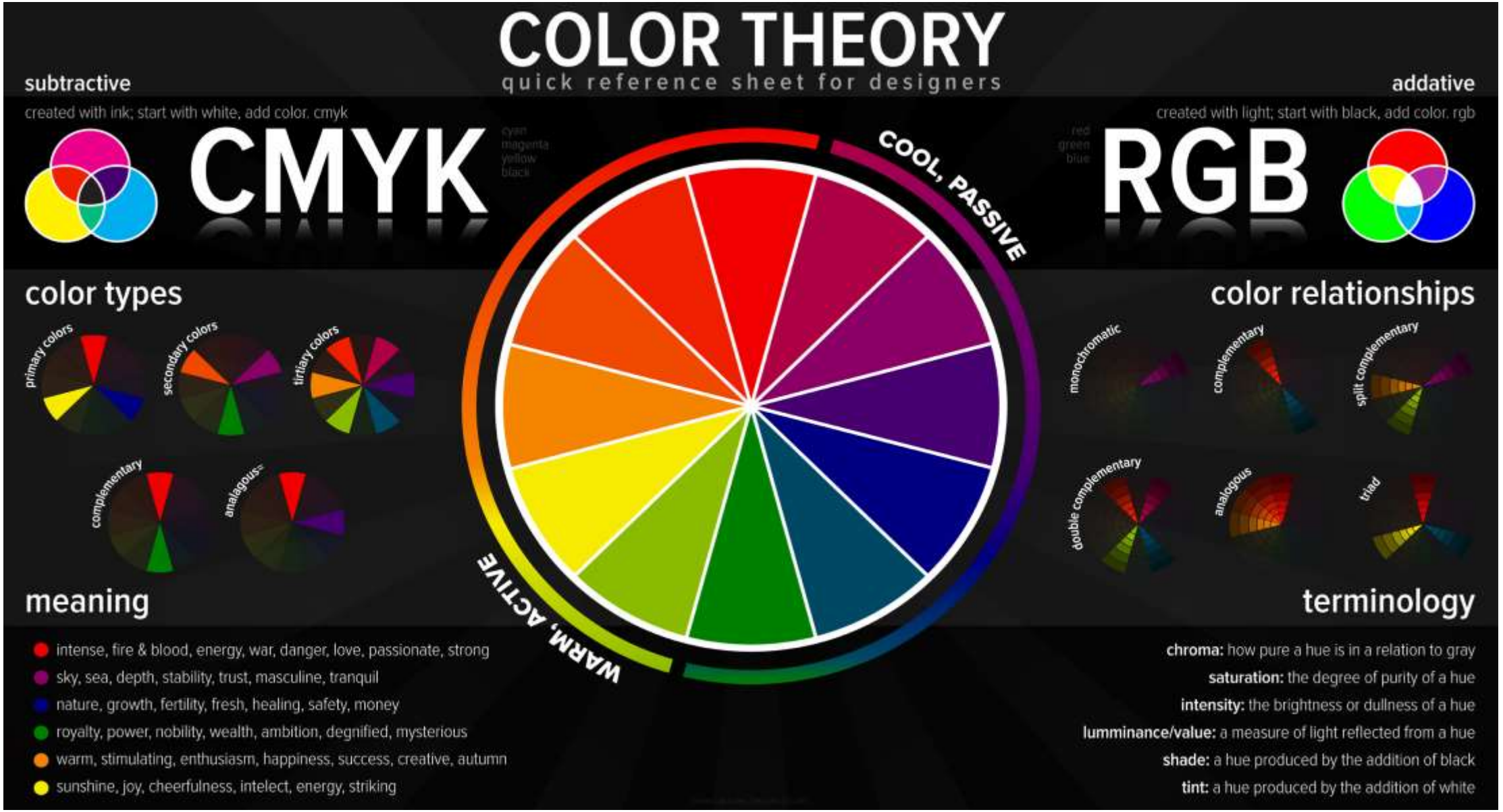

120°
60°
180°
0°
240°
300°
Hue
Lightness
0
1
Color Saturation
0
1


Hue
Saturation
Value

Color Messages

- Used to direct eye travel
- Can add visual weight to photo
- Warm: Yellow, Reds and Orange (sunsets, sunrise, fire, *reds require careful placement*)
- Cool: Blue, Violet and Greens (soothing, snow, water, shadows, sky, grass)
- Vibrant: Enhanced with Saturation (energetic, interesting)
- Contrasting: Can add emphasis: vibrant blue/violet sky, warm (grassland in foreground)

Color Wheel - Simplified



Warm Colors

Red, Yellow, Orange, Light Green

Cool Colors

Magenta, Blue, Violet, Green

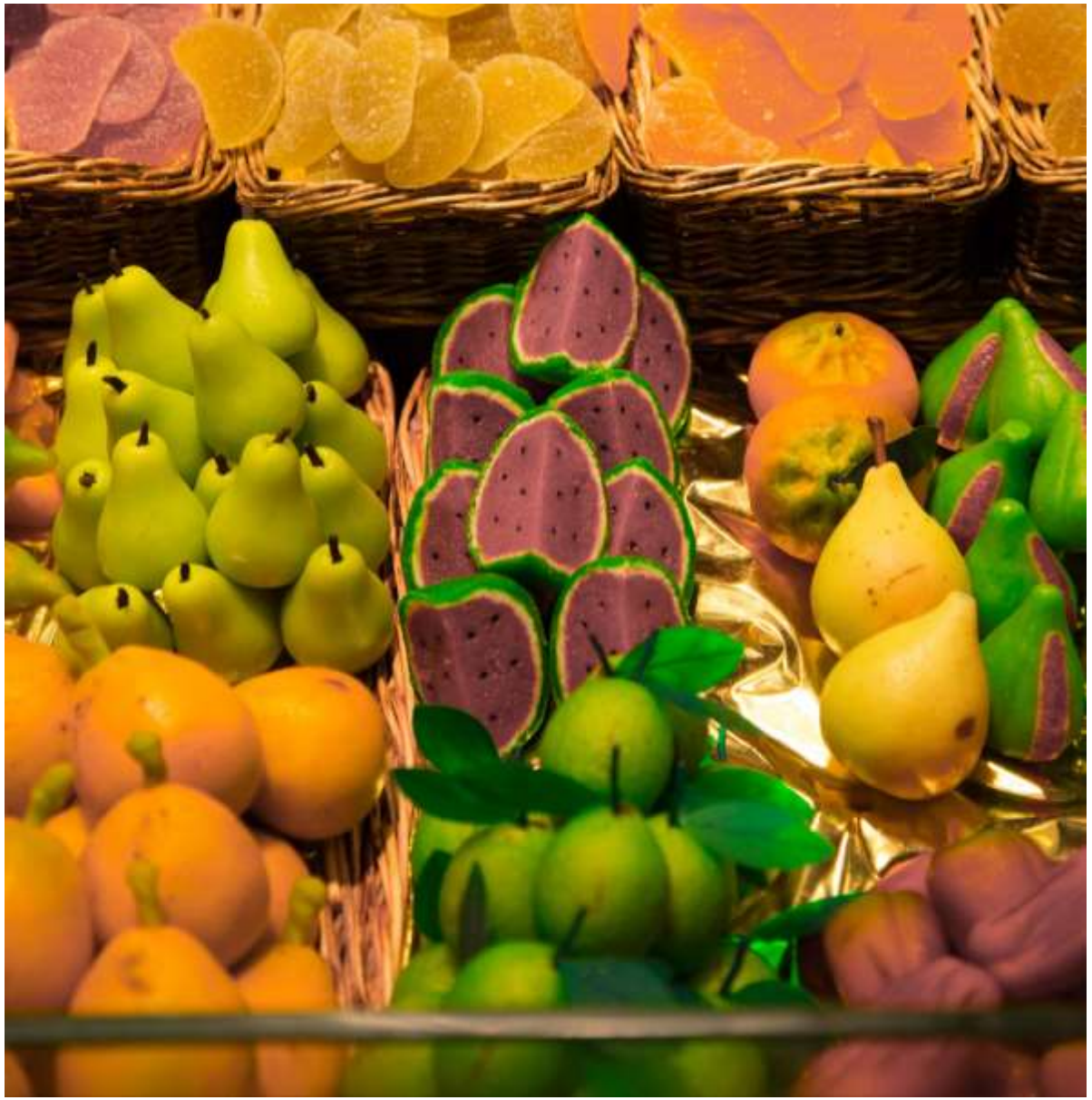
What about the Lack of Color

Directing Eye: POI, Landing Zone

Contrast


ROVER
-KATA

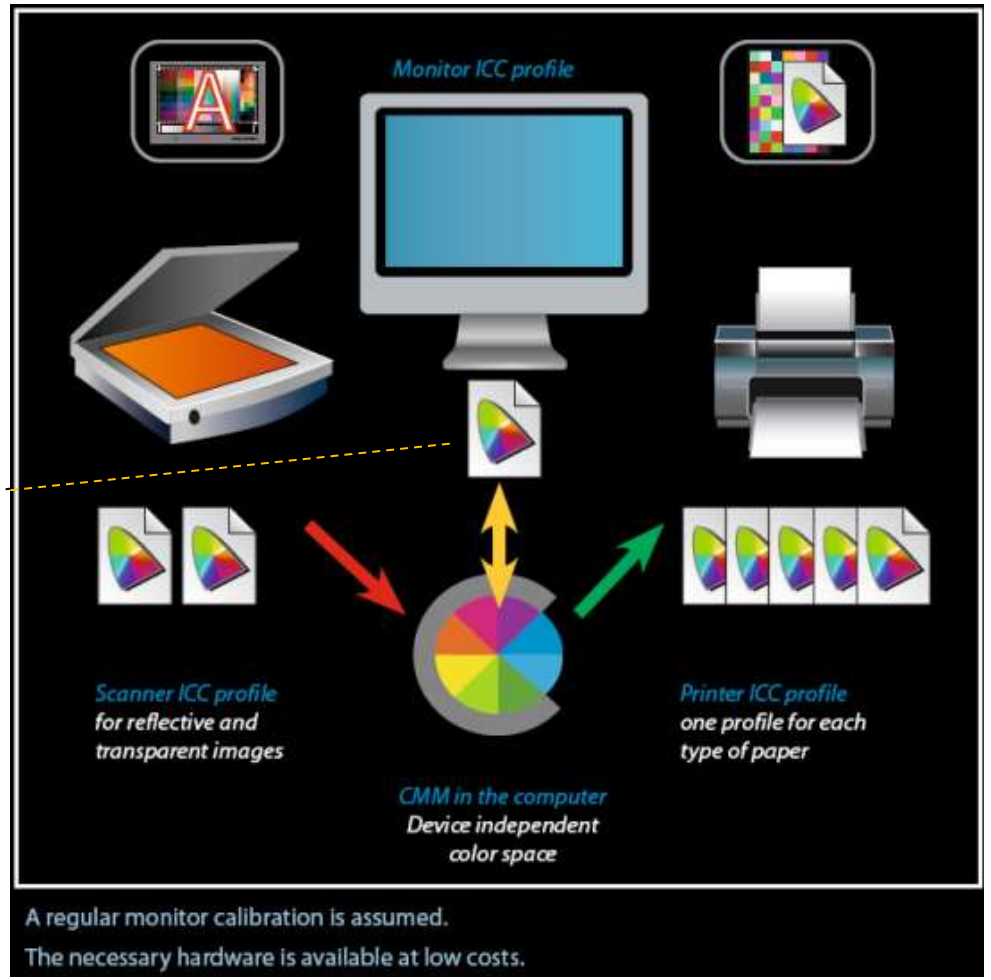
Saturation



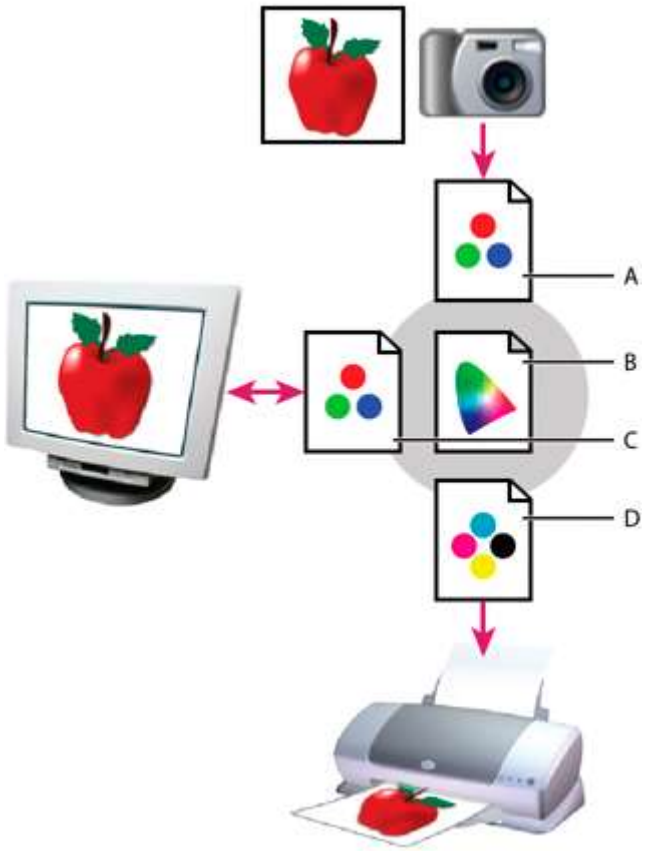
Color Management -*Simplified*

Profiling - No Two Color-Recording/Transmitting/Printing Devices See Color The Same

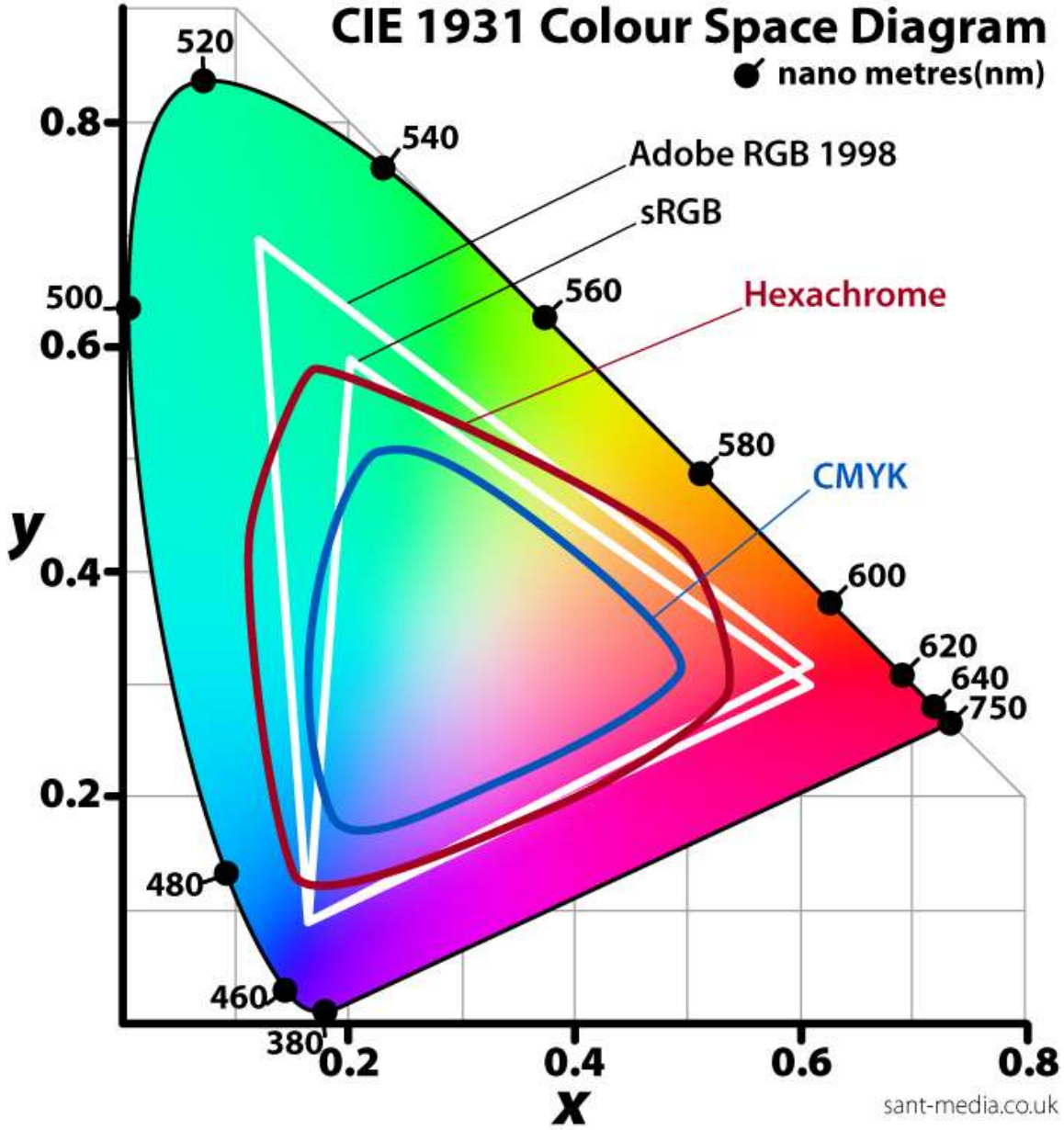
Photo Editor



Color Managed by Devices



Color Space


CIE 1931 Colour Space Diagram
nano metres(nm)
520
540
560
580
600
620
640
750
500
480
460
380
Adobe RGB 1998
sRGB
Hexachrome
CMYK
0.8
0.6
0.4
0.2
y
0.2
0.4
0.6
0.8
x
sant-media.co.uk

RGB vs CMYK

Red, Green and Blue

- *Transmitted* from a light source: monitors
- Additive colors: equal amounts create levels of gray (white to black)
- Matches color receptors in our eyes (Yaaaaah)

Cyan, Magenta, Yellow, K black

- *Reflected* colors
- Subtractive colors: photo prints, magazines, anything printed
- Part of the challenge of creating prints that match your monitor (Boooooooo)

WHAT YOU SEE ON SCREEN

RGB

CMYK

HOW IT WILL PRINT

Color Depth – *Very* Simplified

Dynamic Range – Why & When Important

- 2 bit depth: 2 tones (black and white)
  - *per pixel*
  - *no shades of grey possible*

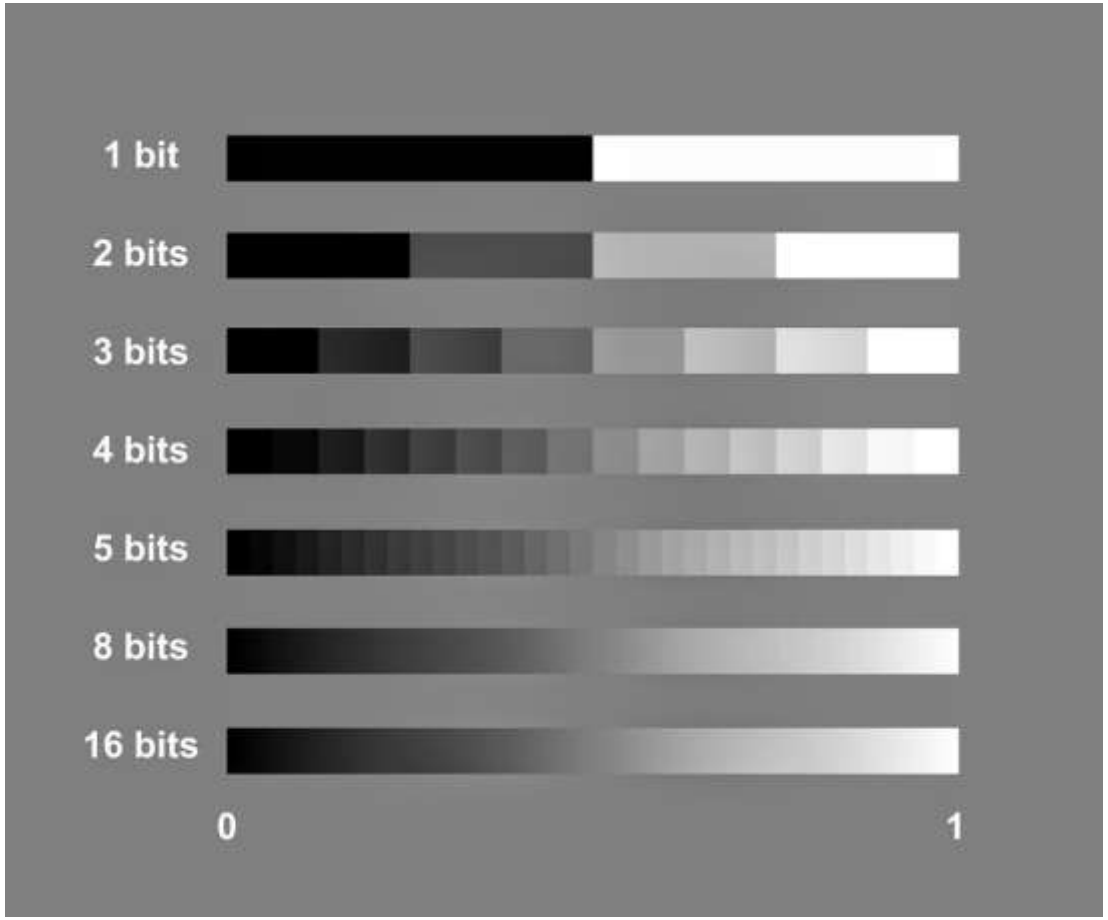
- 8 bit depth:

  - 2^8 That's 2 to the 8th power (2x2x2x2x2x2x2x2)

  = 256 tones/steps from black to white
  - Or shades of red or green or blue pixels
  - 256 shades of red x 256 shades of green x 256 shades of blue =

16 Million Shades of Color!

Bit Depth Comparison



Greater Bit Depths

- 14 bit depth: 16,384 tones per pixel
  - Camera raw
  - 4+ Trillion Shades

- 16 bit depth: 65,536 tones per pixel
  - Photoshop interpolation from 14 bit RAW

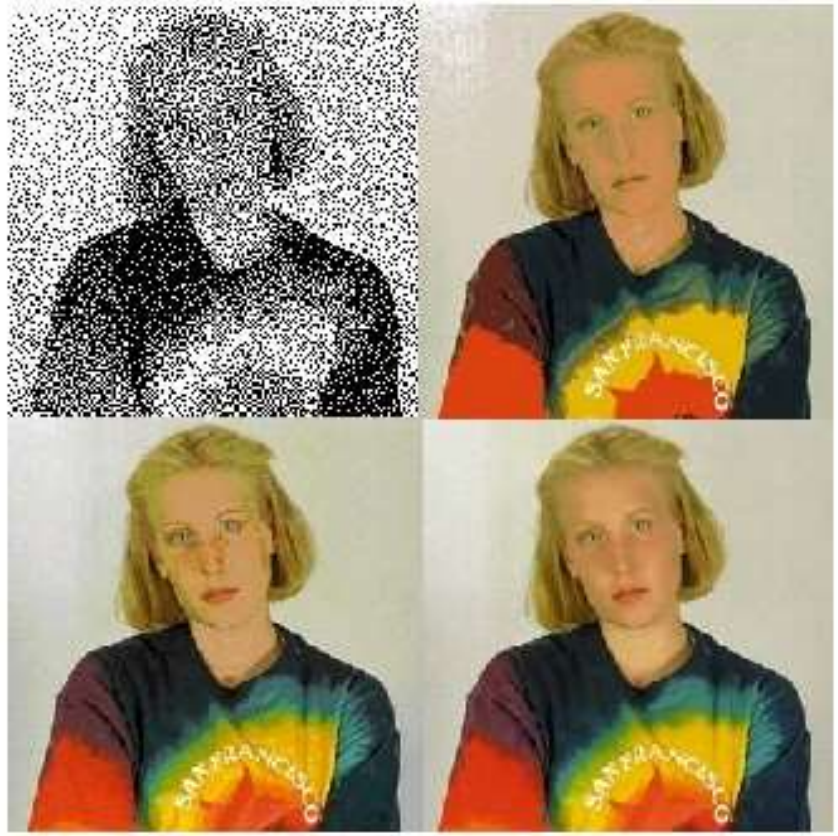
Human eye capability ?

Why is Bit Depth Important?

- Richness of colors
- Tonal smoothing
- Ability to make major changes when editing and maintain tonal smoothness

Examples of Color Depth

1-bit depth



4-bit depth

8-bit depth

16-bit depth

8-bit video

10-bit video

Assignment for class 4: December 3, 2021

- The previous classes discussed Negative Space, Depth of Field, Vantage Point, Perspective, Overlap, Volume.
- In 3 photos, use color as the principal compositional element, AND In each image include 1 – 3 (more points for 3) of the compositional elements from prior class discussions.
- Zoom instructions will follow.

Happy Thanksgiving