

DEEP DIVE

Color as Light

Objects do not have fixed colors — they reflect light. The color of an object is always a combination of its local color and the color of the light illuminating it.

Advanced color theory is built on a single foundational insight: color is light. Objects do not have inherent colors -- they have surfaces that absorb some wavelengths of light and reflect others. The color you see is the reflected wavelengths interpreted by your eye under a specific lighting condition. Change the light, and the color changes.

SPECTRAL REFLECTION

Every surface has a spectral reflectance curve -- a graph showing which wavelengths it reflects. A red apple reflects primarily long wavelengths (red) and absorbs most others. But under blue light, that red apple appears nearly black. This is why subjects under different colored light sources look so different -- the spectral interaction between light color and surface color determines what reaches your eye.

LOCAL COLOR VS. COLOR UNDER LIGHT

Local color is the idealized true color of a surface -- the color it would appear under neutral white light. In any real lighting condition, the local color is modified by: the color temperature of the light source, the presence of colored shadows (ambient light), reflected color from nearby surfaces, and the intensity of the light. Advanced painters rarely paint local color -- they paint the interaction of light with local color.

ADDITIVE VS. SUBTRACTIVE COLOR

Light mixes additively: combining red, green, and blue light creates white. Pigment mixes subtractively: combining cyan, magenta, and yellow pigment approaches black. This distinction is fundamental when working digitally (where you mix light) vs. traditionally (where you mix pigment). Many color mixing errors come from applying additive logic to subtractive media or vice versa.

EXERCISES

Day 1: Paint the same object three times under three different colored light sources. Day 2: Mix a color match for five objects from life, starting from only primaries. Day 3: Paint a scene bathed in warm sunlight, then repaint the same scene under cool overcast light. Day 4: Paint a scene where a colored surface reflects onto an adjacent white surface. Day 5: Paint a single object and deliberately separate local color from the light family color and shadow family color.