Unit 3

Additive Color

IN CLASS PARTICIPATION: 09/10
QUIZ ON UNITS 3-4: 09/15

GROUP EXPERIMENTS

Objective

To introduce the basic physics of Color as it relates to light. To differentiate "Additive" mixing from "Subtractive" mixing (the latter being the one most artists are familiar with).

Unit Overview

Unit 3 will be a series of studio exercises we will experience as a group. You will be graded on your class participation. Also, you will be quizzed on Units 3/4 on the principles of Additive and Subtractive Color.

Exercise 1:
You will fill in the blanks of a basic color wheel with what you know about primary and secondary colors using the blank handout provided. As a class, we will discuss the results of the majority of what the class has filled in on their sheets. We will discuss the fact that there are two ways that our eyes perceive color - and for the purposes of this unit, we will discuss color made with light, that being "Additive" color. We will examine how the color wheel is different than the primary and secondary colors most of us know. Those needing to can correct their notations on the color wheel hand-out.

Exercise 2:
We will stage a light demonstration using RGB filters and light sources. OPTION A-This be done with a field trip to the theater department where a member of that department will demonstrate using theater lighting making spotlights of RGB, overlapping to create CYM, with the center overlap of all 3 creating white light. OPTION B - We will stage the same kind of demonstration in the classroom using 3 slide projectors or spot lights and RGB Kodak Wratten filters.

Exercise 3: (optional, weather and water availibility permitting)
Go outside where we can have access to a hose and spicket and create a rainbow by making a fine spray lit by the sun. You will be able to see how white light splits into the spectrum of colored light.

Exercise 4:
Show slides of artists using light and color created by light in their work. Bring up the Wikipedia page noted in the reading assignment on a laptop computer. With 10X or greater magnifier, everyone will look at the screen in the full white area. You will be able to see the three colors RGB that are making up the "white" area on the screen. Try looking at colored areas to see if there is any difference.

Vocabulary

Refraction: the change of direction of a ray of light, in passing obliquely from one medium into another in which its wave velocity is different. This is what happens when white light passes thru a prism and reveals the color spectrum.
Visible Spectrum: the part of the electromagnetic spectrum to which the human eye is sensitive extending from a wavelength of about 400 nm for violet light to about 700 nm for red light
Spectral Hues: A hue which is present in the spectrum of colours produced by splitting white light with a prism. Spectral hues include red, orange, yellow, green, blue, indigo and violet.
Additive Color Mixing: The mixing of colored light sources uses additive color mixing. Color mixing takes place when two or more colors come together to form a different color.
Transparency: A transparent object, especially a slide or filter that can project color by light shining through it from behind.

Artists to look up: *(PowerPoint presentation is available on Blackboard)*

Dan Flavin, James Turrell, Ed Carpenter, Olafur Eliasson

Local Field Trips: *(can be used for your Exhibition Review Paper)*

Phoenix Art Museum to see James Turrell's *Tall Glass*; the Phoenix Rental Car Center at 1805 East Sky Harbor Circle South to see Ed Carpenter's *Phoenix Crosstitch*.

Reading:

Class Text: Color Workbook, Becky Koenig - Chapter 1, Pages 1-13 and Chapter 6, Page 100 "THE COLOR MONITOR; online at: *http://en.wikipedia.org/wiki/Additive_color*

Unit 3 - Grading Criteria: 20 Points

Class Participation in Additive Color Experiements - 5 points

- *Did you actively participate in discussion and observation?*
- *Did you listen for information that will help you in future projects?*

Unit 3-4 Quiz - 15 points

- *15 questions worth 1 point each*