21st CENTURY COLOR LITERACY PROJECT

Two Perspectives Presented By

LUANNE STOVALL
MAGGIE MAGGIO
TEACHING 21st CENTURY COLOR

Two Experimental Approaches

THE NEW COLOR - University
COLOR EXPLORERS - Kindergarten
THE NEW COLOR

A 21st Century Field Guide

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MFA Tufts University, School of the Museum of Fine Arts, Boston
THE NEW COLOR, A 21st Century Field Guide
College of Fine Arts, University of Texas, Austin
Board of Directors, ISCC
BAUHAUS@100 = EVERYDAY DESIGN

The diagram on the left illustrates the Bauhaus curriculum with categories such as Preliminary Course, Building Knowledge of Construction and Engineering, Stone, Wood, Clay, Glass, Color, Textiles, Geometry - Color Composition, and Elementary Form. The diagram on the right shows a color wheel with sections labeled Art, Math, Science, Technology, Engineering, and Color Learning Model, with colors B, C, G, and Y. The image is from the 71st Annual Technical Conference in Minneapolis, MN, 2019.
I prefer to live in color

David Hockney
GIANT RABBIT HOLE

Asking the Question

“What is Color?”
ART 350C
SPRING 2019

21st CENTURY COLOR
Visual Literacy
Color Competencies
Global Communication
Color Fluent not Color Blind
THE COLOR EVOLUTION

#STEAM

- SCIENCE
- TECHNOLOGY
- ENGINEERING
- ARTS
- MATH
THE NEW COLOR reframes the color field as a dynamic phenomenon relevant to sensory perception, communication and visual literacy - not just for artists and designers but for everyone. This course offers a multidisciplinary way to explore the dense networks of color codes coursing through our lives every day and gain practical color competencies for 21st century applications.

COURSE OBJECTIVE: Students will gain color competencies essential for visual literacy essential to effective communication outcomes across disciplines.

COURSE STRUCTURE

● Guest speakers series increase a student’s ability to evaluate color-focused concepts articulated by practitioners in the fields of art and design, neuroscience, biology, industry, health and wellness, psychology, and marketing.

● Course reading packet for class discussions, site visits, hands on labs for color mapping and color perception experiments, collaborative research projects
Color Competencies for Visual Literacy

- Color Evolution: Color Field Timeline
- Color Science: Physics of Light, Physiology of Vision
- 21st Century Color Mapping / Color Terminology
- Color Psychology: Emotional Triggers, Color Bias
- Color Perception: Color Interaction & Design
- Color & Industry
- Color & Wellness
- Color Field Tool Kit: 12 Chromatic Strategies
Wednesday Evening Color Salons

Guest Speaker Series

Wednesdays > Spring 2019
6–8 pm
UT Art Building, Auditorium 1.102
2301 San Jacinto Blvd
Free and Open to UT and the Public

Presented as part of the course The New Color (ART 355C), taught by Luanne Stovall, artist and color theorist.

The New Color celebrates the Bauhaus Centennial (1919–1933): the German Art + Design School that pioneered modern design. This course offers a multidisciplinary way to explore the dense networks of color codes couting through our lives and gain practical color competencies for 21st century color applications—not just for artists and designers but everyone. The living color field is positioned at the intersection of Science, Technology, Engineering, Art, and Math (STEAM Learning Model). The goal is to provide color competencies for visual literacy. Wednesday Evening Color Salons pair guest speakers with color-focused topics.

Wednesday, January 23
What is Color? Color Fluent not Color Blind
Luanne Stovall > Department of Art and Art History

Wednesday, January 30
Mapping the 21st Century Color Field
Jesse Cline > Graphic Designer, Department of Art and Art History

Bauhaus@100, Art for Daily Life
Luanne Stovall > Department of Art and Art History

Wednesday, February 6
Flatland, Color in Early Modern Art
Linda Henderson > Art Historian, Department of Art and Art History

Wednesday, February 13
Color Vision: Why Isn’t Purple in the Rainbow
Xaq Pitkow > Neuroscientist, Rice University and Baylor College of Medicine

Wednesday, February 20
Color Marketing & Psychology in Popular Culture
Elizabeth Foster > Senior Environment Artist, Armature Studio
Leana Sherman > Retail Brand Experience Manager for Diesel, Nike, YETI
Michelle Washington > Fashion Industry Professional and Instructional Coordinator of ACC Fashion Incubator
Matthew McClatchy > Creative Director Advertising Faculty, UT Austin

Wednesday, February 27
The Theatre of Color
Michelle Habeck > Lighting Designer
Karen Mannawa > Set Designer
Susan Mickey > Costume Designer
Department of Theatre and Dance, UT Austin

Friday, March 6
Beauty & Danger: Color Coded Nature
Michael J. Ryan > Integrative Biology, UT Austin
Julia Clarke > Geosciences, UT Austin

Friday, March 13
Your Color Field Guide Tool Kit: 12 Chromatic Strategies
Luanne Stovall > Department of Art and Art History

Friday, March 27
Living in Color: Pigments & Chemistry in Everyday Life
Astrid Rungagard > Personaomicerica, CT Austin
Fran Gale > School of Architecture, UT Austin
Charlotte Herzele > Nutrition Sciences, UT Austin
Miranda Bennett > Designer, Miranda Bennett Studios

Friday, April 3
Everyday Design, the Arts & Crafts Movement
Monica Perlick > Design Historian, School of Design and Creative Technologies, UT Austin
Jessica Douglas-Home > UK Writer, Painter
Leslie Ernst > Creative Director, Ransom Center, UT Austin

Friday, April 10
Color and Wellness
Sally Augustine > Environmental Psychologist at Design with Science

Friday, April 17
Industrial Strength Color
Harrie Schools > Ascend Materials
Color Managers > FPP, Multiple Industries

Friday, April 24
The White Shaman Mural, Cracking the Color Codes
Carolyn Boyd > Archeologist, Texas State University and Founder of Shumla Archeological Research and Education Center
The Theatre of Color

Color has been used by humans to tell stories since we left our handprints on cave walls. Visibility, focus, mood, location, time of day, plot, composition, trauma. This Color Salon offers an eye-opening tour of the theater where color plays center stage. Join us as we explore Bill Bloodgood’s shines behind the scenes, costume designers Nanette Acosta and Cat Grahm bring the characters to life, and lighting designer Michelle Habek illuminates the color-coded world unfolding before our eyes.

Presented as part of the New Color Initiative
2019 Spring Conference

Be Colorful, Not Color Blind
FEB 27

Beauty & Danger: Color-Coded Nature

Why do all animals yearn for beauty? From iridescent dinosaur feathers and peacock spotters to male browser’s dazzling bachelor pad, color signals beauty, sex, danger, and death. Michael Ryan, a leading researcher in the field of sexual selection and evolutionary biology and "Passion Sleuth," Julia Clarke guide us through color’s fundamental role in the evolution of life on planet earth. You’ll discover why we can’t resist the taste of beauty and why color is never “merely decorative.”

Presented as part of the New Color Initiative
2019 Spring Conference

Be Colorful, Not Color Blind
MARCH 6

Your Color Field Guide Tool Kit: 12 Chromatic Strategies

Join Artist and Color Theorist Luanne Stovall on a tour through the living color field, where diverse networks of color, codes signal complex messages and operate as emotional triggers. Explore techniques to crack the color codes for more effective communication skills. Along the path, discover practical ways to build your own Color Field Tool Kit, stocked with 12 Chromatic Strategies—essential for navigating color relationships, sharpening color competencies, and structuring impactful color palettes tuned to your target audience.

Presented as part of the New Color Initiative
2019 Spring Conference

Be Colorful, Not Color Blind
MARCH 13
Wednesday Evening Color Salons

Flatland, Color in Early Modern Art

Linda Henderson shines light on the changing approaches to color in painting in the late 18th and early 19th century, when color came into its own as a means for artists: self-expression. Instead of simply describing the visible world, color became a tool for artists to develop new goals for painting. Beginning with Post-Impressionists like Gauguin and Van Gogh, the lecture concludes with Wassily Kandinsky, who led behind the visible world completely to make totally abstract paintings intended to “set up vibrations” in the soul of the viewer—visually and with the sound he associated with different colors through his synesthetic perceptions.

Wednesday Evening Color Salons

Color Vision: Why Isn’t Purple in the Rainbow

Neuroscientist Xiaq Piklor will take you on an informal tour through our visual system, showing how our eyes change light into color. Out there in the world, what we know as color doesn’t exist. Instead, color is created by our eyes in two amazing steps. Xiaq explains the neuroscience behind this magic in a way that is geared toward artists and other non-scientists, illustrating the concepts with lots of pictures, metaphors, and optical illusions. At the end of the talk, you’ll understand why primary colors come in threes, why some pairs of colors are complementary, and why rainbows don’t have purple.

Wednesday Evening Color Salons

Color Marketing & Psychology in Popular Culture

Color is an emotional trigger—weaving complex messages into the clothes we wear, the environments we navigate, and the games we play. Join us to explore behind-the-scenes psychology operating at the intersection of color and popular culture, where custom palettes resonate with specific target audiences. Learn how Elizabeth Foster color-codes video game worlds. Michelle Washington tracks color palettes across diverse fashion platforms, and Leana Shifman and Matt McCulloch manage carefully constructed retail brand experiences vital to the success of companies from Diesel, Nike, and YETI, to Home Depot and Baskin Robbins.
COLOR FIELD TIMELINE

Standing on the Shoulders of Giants
COLOR SCIENCE

Physics of Light, Physiology of Vision
COLOR PSYCHOLOGY

Emotional Triggers, Color Bias

Color Psychology

- Black: evil, unhappiness
- White: purity, innocence
- Red: love, excitement
- Blue: calmness, sadness
- Green: envy
- Yellow: warmth, energy
- Purple: wealth, mystery, wisdom
- Brown: reliability, strength
- Orange: enthusiasm, attention
- Pink: romance, kindness
COLOR PERCEPTION

Color Interaction & Design
COLOR & INDUSTRY
COLOR FIELD TOOL KIT

12 Chromatic Strategies
MOVING FORWARD

THE LONG TERM GOAL of this project is to reframe COLOR as a robust multi-disciplinary STEAM Learning Model at all educational levels, structured with clearly defined competencies aligned with 21st century industries – in order to enhance communications across all disciplines for more informed, inspired, and effective solutions.
COLOR FLUENT
NOT COLOR BLIND
COLOR EXPLORERS
In the CLASSROOM

MAGGIE MAGGIO
Architectural Designer, Artist, Teaching Artist
Drexel University, Syracuse University
SMASHING COLOR
Co-Chair, International Color Association Study Group on Color Education
Board of Directors, ISCC
Why didn’t we learn this in grade school?
VIBE of PORTLAND
Arts and Music Non-Profit
Founder - Laura Strieb
Rainbow Plus Project
Staff and Volunteers
Playing with Prisms + Light Table
Diffraction!
Magenta + Yellow = RED!
Color Flowers + Color Flows
INTEGRATING SCIENCE + ART
LIGHT + VISION
INTERACTIONS + DIMENSIONS
ADDITIVE + SUBTRACTIVE MIXING
PRINTING + PARTITIVE MIXING
CLASSTROOM COLOR

PROBLEM #1
Color Naming Is Fun

PROBLEM #2
Red Yellow Blue

PROBLEM #3
Color is 2D
PROBLEM #1
Color Naming
Free Printable Preschool Basics Poster

DomanMom.com
KINDERGARTEN CORE

- Letters
  - A
  - B
  - C

- Shapes
  - Triangle
  - Circle
  - Square

- Numbers
  - 1
  - 2
  - 3

- Colors
  - Red
  - Green
  - Blue
BOARD BOOKS
COLOR NAMES IN BOARD BOOKS?

Basic Color Terms: Their Universality and Evolution (1969)

Language of Color

Black
White
Red
Green/Yellow
Blue
Brown
Orange
Purple
Pink
Gray

Berlin and Kay
Magentasaurus Rex

I'm not PINK!
Which Color Is Magenta?

Magenta

Color coordinates

Hex triplet | #FF00FF
sRGBB (r, g, b) | (255, 0, 255)
CMYK (c, m, y, k) | (0, 100, 0, 0)
HSV (h, s, v) | (300°, 100%, 100%)
Source | CSS Color Module Level 3

B: Normalized to [0–255] (byte)
H: Normalized to [0–100] (hundred)

Magenta (Fuchsia)

Color coordinates

Hex triplet | #FF00FF
sRGBB (r, g, b) | (255, 0, 255)
CMYK (c, m, y, k) | (0, 100, 0, 0)
HSV (h, s, v) | (300°, 100%, 100%)
Source | X11

B: Normalized to [0–255] (byte)
H: Normalized to [0–100] (hundred)

Process magenta (subtractive primary, sRGB approximation)

Color coordinates

Hex triplet | #FF0090
sRGBB (r, g, b) | (255, 0, 144)
CMYK (c, m, y, k) | (0, 100, 0, 0)
HSV (h, s, v) | (320°, 100%, 100%)
Source | [1] CMYK

B: Normalized to [0–255] (byte)
H: Normalized to [0–100] (hundred)
Which Color is Cyan?

Cyan (additive secondary)

- **Hex triplet**: #00FFFF
- **sRGB** \((r, g, b)\): \((0, 255, 255)\)
- **CMYK** \((c, m, y, k)\): \((100, 0, 0, 0)\)
- **HSV** \((h, s, v)\): \((180^\circ, 100\%, 100\%)\)

Source: X11

- B: Normalized to \([0–255]\) (byte)
- H: Normalized to \([0–100]\) (hundred)

Cyan (subtractive primary)

- **Hex triplet**: #00B7EB
- **sRGB** \((r, g, b)\): \((0, 183, 235)\)
- **CMYK** \((c, m, y, k)\): \((100, 22, 0, 8)\)
- **HSV** \((h, s, v)\): \((193^\circ, 100\%, 92^{18\%})\)

Source: CMYK19

- B: Normalized to \([0–255]\) (byte)
- H: Normalized to \([0–100]\) (hundred)
PROBLEM #2
Red Yellow Blue
HOW TO USE "COLOR KEY"

Turn a color on the dial to an outside color. The mixture appears in window.

Primaries...red, yellow, blue.

Secondaries...mixture of two primaries.

Intermediates...mixture of a primary and a secondary.

Tints...are made by adding white.

Tones...are made by adding black.

BASIC COLOR MIXTURES

EARTH...made by adding burnt green to primary colors.

GRAY...sea white with black or tone with a color.

SEA WATER...mix blue and blue green with black or white.

SKY...sea white with blue and touch of red or yellow.
The Color Wheel Company + NAMTA
Which Color Wheel?

Golden – Paint

Color Wheel Company – Print
PROBLEM #3
Color In 2D
3D Color in 2D

3D Color
Runge Sphere  
Kolormondo
NAEA + KOLORMONDO
Which Color Space?
WHY?
COLOR is an ideal STEAM* SUBJECT

* Science, Technology, Engineering, ART, and Math
\[
\int_{-\infty}^{\infty} \frac{k}{k+i\mu}(k-i\mu) e^{ikr} dk = 2\pi \frac{i\mu e^{-ikr}}{k^2 + \mu^2}
\]

\[
\int_{0}^{\infty} \frac{k}{k+i\mu}(k-i\mu) e^{ikr} dk = \pi i e^{-ikr}
\]

\[
\int_{0}^{\infty} \frac{k}{k^2 + \mu^2} e^{-ikr} dk = \frac{\mu e^{ikr}}{k^2 + \mu^2}
\]

\[
\int_{0}^{\infty} \frac{k}{k^2 + \mu^2} e^{ikr} dk = \pi i e^{ikr}
\]

71st Annual Technical Conference · Minneapolis, MN · 2019
Left Brain

Right Brain
Left brain

I am the left brain.

I am a scientist. A mathematician.

I hate the unfamiliar. I categorize. I am accurate. Linear.

Mathematically, irrational. I am practical.

Always in control. A number of words and language.

Right brain

I am the right brain.

I am the right brain.

I am creative. I am passion.

Yielding, Somehow, I am the heart of feeling, laughter, 

Imagination. I feel on the inside in each moment.

Nothing is achieved without passion.

Right brain

I am the right brain.

I am the right brain.

I am everything wanted to be.

I am the right brain. I am creative. A free spirit. I am passionate. Learning. Sentimental. I am the sound of falling leaves. I am taste. The feeling of sand beneath bare feet. I am innovative. Vivid colors. I am the urge to paint on an empty canvas. I am boundless imagination. Art, music. I am who I am. I am everything I wanted to be.
Left Brain + Right Brain
“The entire creative process involves the whole brain.”

- Neuroscience of Creativity
COLOR

is a

Universal

LANGUAGE
Languages allow us to -

- Tell Stories
- Express Needs
- Share Feelings

but . . .
Learning a Language Takes TIME
I CAN talk!
Exploring Color from Infancy
To Kindergarten + Beyond
COLOR

is

MULTI-DISCIPLINARY

Full Circle Back to THE NEW COLOR
COLOR
is
AWESOME