Design fundamentals

NOTES on COLOR

(THEORY)

WRITTEN BY: ROSE GONNELLA
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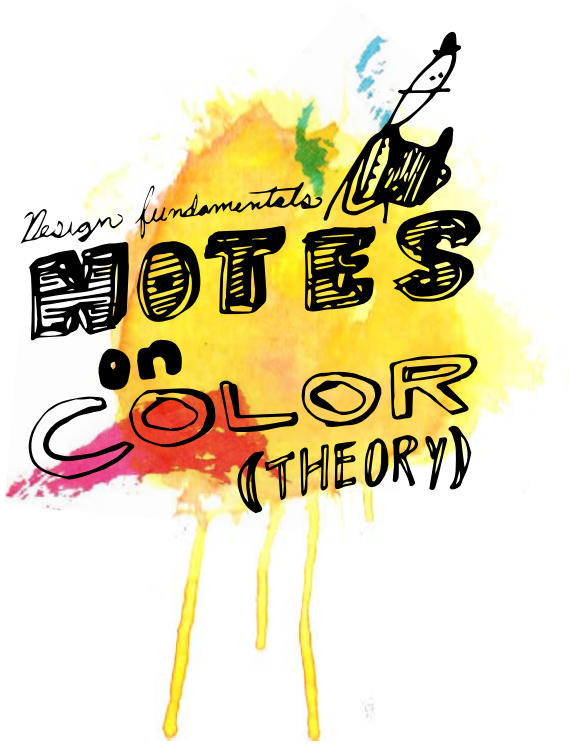
Design fundamentals
NOTES
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COLOR
(THEORY)

Design Fundamentals: Notes on Color Theory

Rose Gonnella and Max Friedman

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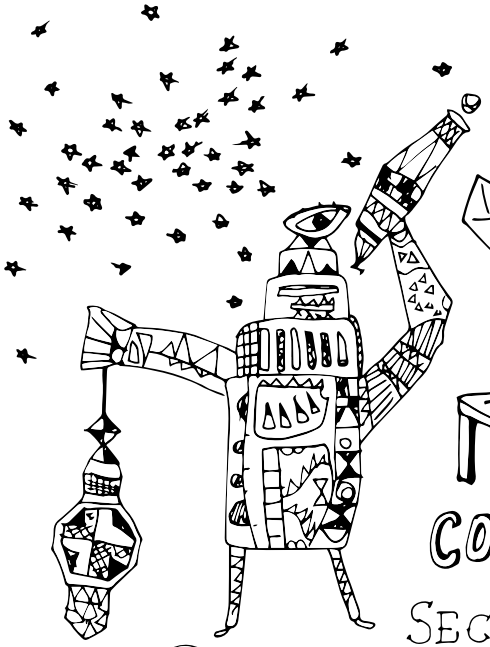

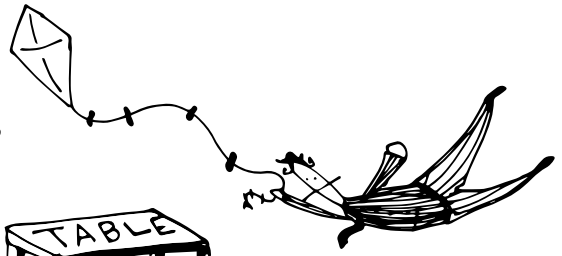

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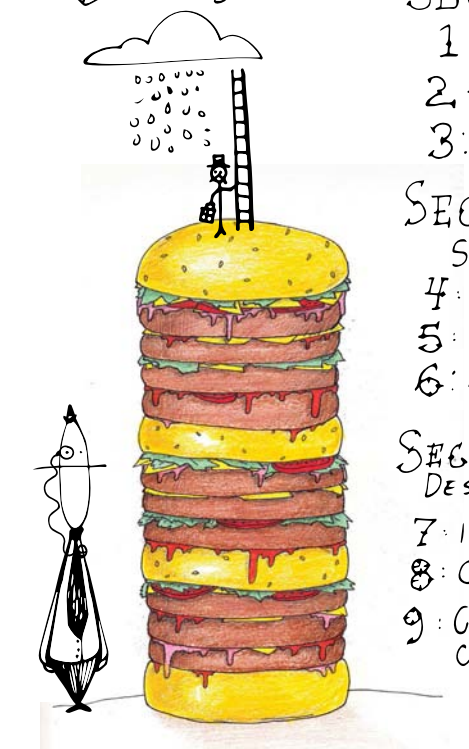


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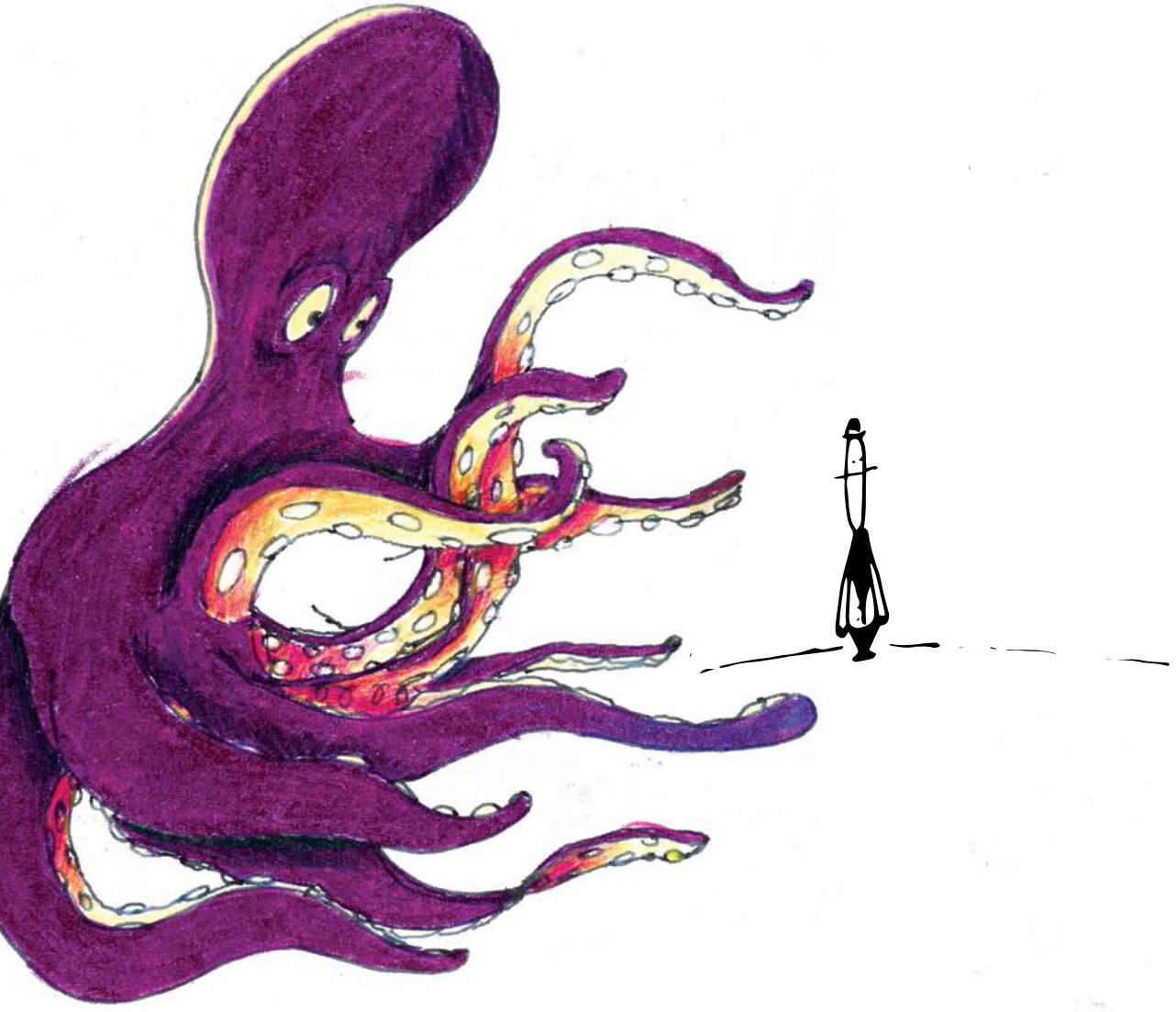
THESE ARE MY NOTES FROM COLOR THEORY 101 CLASS.
I TRIED TO INCLUDE ALL THE KEY POINTS AND EXERCISES WITH MY ILLUSTRATIONS.
THE CLASS WEBSITE HAS SOME GREAT INFORMATION AS WELL.
WWW.DESIGN-FUNDAMENTALS.COM
THIS NOTEBOOK IS DEDICATED TO MY GRANDFATHER MITCHEL FRIEDMAN.



COLOR PHYSICALLY
SURROUNDS US.

OVERARCHING LEARNING OUTCOMES FOR THIS COURSE

RECOGNIZE THE PHYSICAL NATURE OF LIGHT & COLOR.

DEMONSTRATE AN UNDERSTANDING OF COLOR RELATIONSHIPS AND INTERACTION.

DESIGN AFFECTIVE ARRANGEMENTS OF COLOR (W/ EXQUISITE SUBTLETY OR PANACHE).

RECOGNIZE COLOR DIVERSITY OF SYMBOLISM & CULTURAL CONTEXT.

COMMUNICATE MEANINGFULLY AND EXPRESSIVELY WITH COLOR.

METHODS of Learning

- LISTEN, SEEK, REPORT: GUIDANCE ACCELERATES LEARNING.
- ACTIVE IMPLEMENTATION: LEARN BY DOING
- SELF-INITIATED: ⟶

REQUIREMENTS:

- A PLAYFUL, WIDE OPEN MIND
- A NOTEBOOK
- PINTEREST (NOTES ON COLOR)

JOSEF ALBERS (1888-1976), MASTER EDUCATOR AND COLOR THEORIST AT YALE UNIVERSITY IN THE 1950S, LED A GENERATIONAL STUDY ON THE "INTERACTION OF COLOR".

NOTES ON COLOR:

- COLOR HAS A DIVERSE HISTORY.
- COLOR ENCOMPASSES THE SCIENCES AND HUMANITIES.
- COLOR SATURATES OUR SENSES & IGNITES US EMOTIONALLY
- COLOR CONSCIOUSLY AND SUBCONSCIOUSLY OCCUPIES OUR MINDS.
- COLOR IS A COMPLEX (PHYSICAL) ELEMENT OF DESIGN.
- COLOR IS ICONOGRAPHIC
- COLOR COMPELS COMMERCE.
- COLOR IS A FULL AND EXPANSIVE VISUAL LANGUAGE.


COLOR NAMES AND CLASSIFICATIONS

NAME THAT COLOR

SALMON PINK, FARM RAISED OR WILD?

SEA GREEN, WHAT SEA WOULD THAT BE?

British Racing Green

WORLD CULTURES PAST & PRESENT HAVE A RICH VOCABULARY OF COLOR NAMES THAT ARE INDICATIVE OF THEIR CUSTOMS, BELIEFS, AND ENVIRONMENT. THESE NAMES ALSO PROVIDE CLUES TO HUMAN RESPONSE TO COLOR.

BASIC COLOR NAMES IN ENGLISH CORRESPOND WITH THE VISIBLE SPECTRUM ALONG WITH BLACK, WHITE, AND GRAY.

COMBINING BASIC COLORS YIELDS COMPOUND NAMES: RED-ORANGE, YELLOW-ORANGE, BLUE-GREEN, ETC.

THE BASIC LIST EXPANDS WITH COLORS IN FREQUENT USE: BROWN, PINK, MAGENTA, CYAN, ETC.

Apple Red

Apple Green

Baby Blue

COLOR NAMES CARRY ASSOCIATIONS TO HISTORIC LANGUAGES, SOCIETIES, & EVENTS.

BLUE: FROM THE MIDDLE ENGLISH BLEU, OR BLEWE.

MAGENTA: A REFERENCE TO MAGENTA, ITALY (AND THE BLOODY BATTLE OF 1859)

BUT NAMES TRAVEL: BRITISH RACING GREEN, CELADON GREEN - A CHINESE 青瓷绿 CERAMIC GLAZE - ARE IN USE ACROSS CULTURES.

Celadon Green

BLEWE Whale

PIGMENT SUBSTANCES ALSO ORIGINATE COLOR NAMES:

- NATURAL MINERALS OR EARTH: BURNT UMBER (BROWN)

- PLANTS: RED MADDER
- SYNTHETIC PIGMENTS: PHTHALO (CYANINE) GREEN & BLUE

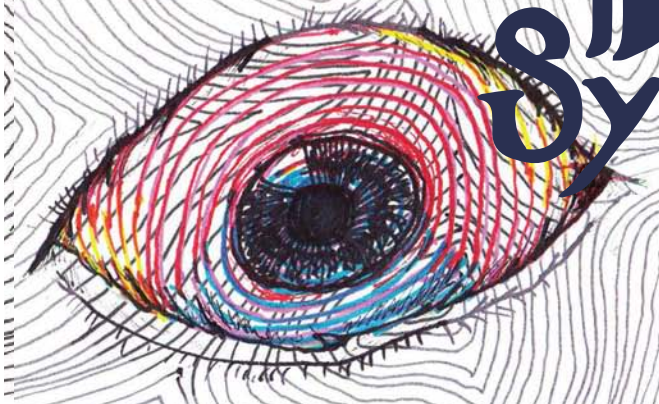
THE VAST MAJORITY OF COLOR NAMES COME FROM DESCRIPTIVE COMPARISON. DESCRIPTIVE NAMES ARE OFTEN RELATIVE ONLY TO A PARTICULAR ENVIRONMENT AND CULTURE AND SO CAN GET CONFUSING: SEA GREEN, WHAT SEA?

IN COMMERCE AND TO PERSUADE CONSUMERS, DESCRIPTIVE COLOR NAMES HAVE NO BOUNDARIES. NAMES ARE MEANT TO STIR EMOTIONS RATHER THAN DESCRIBE A HUE:

DESCRIPTIVE NAMES CREATE EMOTIONAL CONNECTIONS WITH CONSUMERS.

BUT A STANDARDIZED NAMING SYSTEM IS NEEDED TO CREATE ORDER IN INDUSTRIES INVOLVED WITH COLOR.

COLOR IDENTITY SYSTEMS



HUMAN EYES CAN DETECT **10 MILLION** COLORS BUT THE BRAIN CANNOT REMEMBER THEM WITH ACCURACY FOR MORE THAN A FEW SECONDS. STANDARDIZED SYSTEMS ARE NECESSARY TO IDENTIFY (AND REMEMBER) COLOR.

WITH A STANDARDIZED "VOCABULARY" FOR IDENTIFYING (NAMING) COLORS, THERE CAN BE CONSISTENCY ACROSS A VARIETY OF INDUSTRIES:

INK, ART MATERIALS, FABRICS, PAINT, COSMETICS, MEDICAL SUPPLIES, PLASTICS, ETC.

NO SYSTEM CAN DISPLAY MILLIONS OF COLORS.

INSTEAD, A SYSTEM WORKS WITH A LIMITED RANGE of HUES, A STANDARDIZED SUBSTRATE

PAPER FABRIC PLASTIC METAL

AND A SEQUENCE for WHICH THE COLORS ARE DISPLAYED.

NUMBERING SYSTEMS, SUCH AS IN USE BY THE PANTONE OR TRUMATCH COMPANIES, ARE MOST COMMON.

THE HEXIDECIMAL

NUMERAL SYSTEM ESTABLISHES ORDER FOR IDENTIFYING SCREEN-BASED COLOR. THE BASE 16 OR HEX SYSTEM USES COMBINATIONS OF NUMBERS AND LETTERS:

0-10 + LETTERS A-F = 16

C25A7C → DESIGNATES RGB MIXTURE PERCENTAGES:
R/194, G/90, B/124

A.K.A. NAME = TULIP RED
(THERE IS NO HIDING FROM DESCRIPTIVENESS.)

CREATING & DESIGNING ON SCREEN REQUIRES AWARENESS IN THE FLUCTUATIONS OF COLOR FROM MONITOR TO MONITOR. COLORS WILL NOT CHANGE ON A SINGLE COMPUTER FROM MORNING TO NIGHT. BUT BECAUSE OF DIFFERING SCREEN CALIBRATIONS, COLORS READ DIFFERENTLY FROM COMPUTER TO COMPUTER ACROSS PLATFORMS,

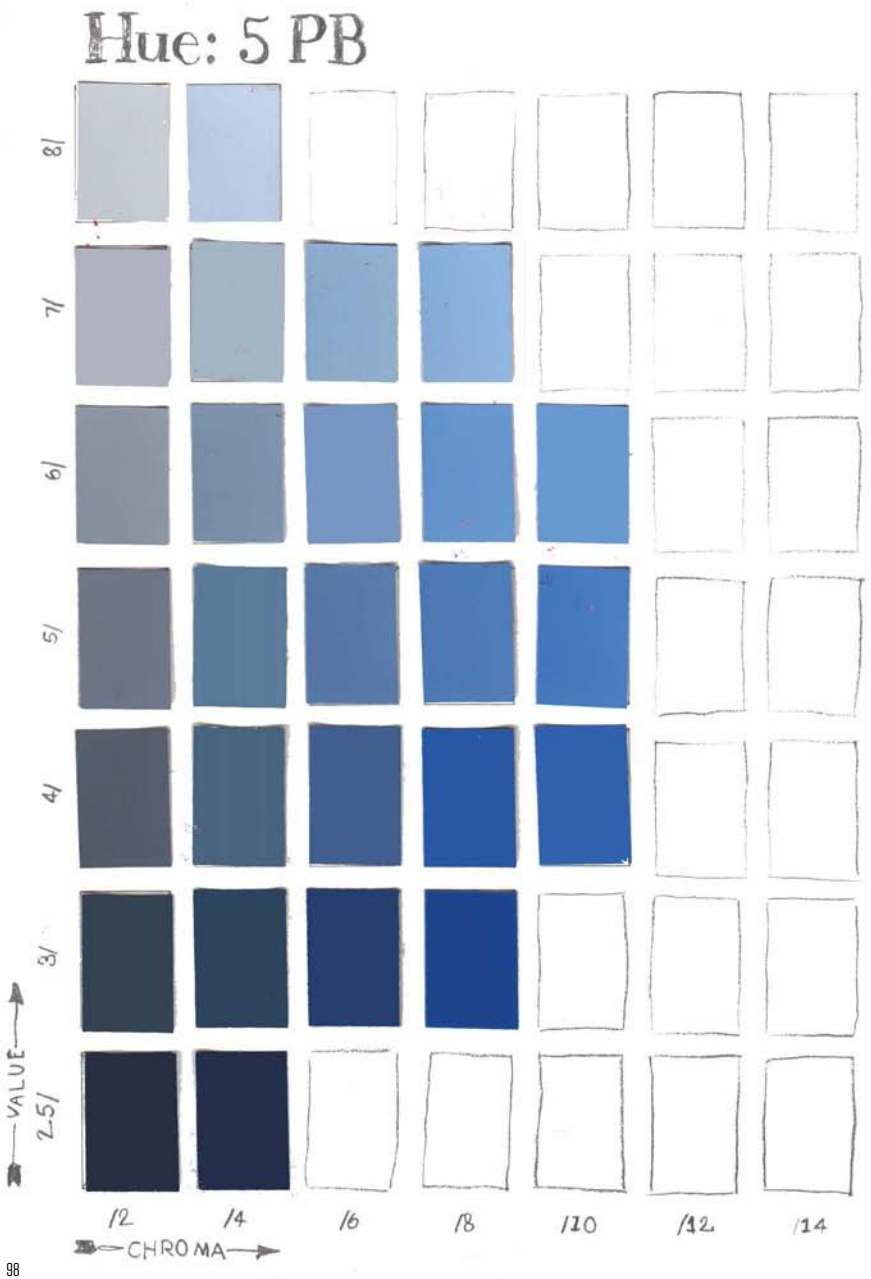
- TV, WEB, MOBILE.

RECOGNIZE THE POTENTIAL PROBLEM & TEST COLORS IN ALL PLATFORMS TO ESTABLISH CONSISTENCY. DON'T FALL IN LOVE WITH A VERY SPECIFIC HUE THINKING IT'S PERFECT; YOUR UNCLE IN ITALY MAY SEE IT DIFFERENTLY...

NOTE:

MAINTAINING COLOR INTEGRITY ACROSS PRINT MEDIA & ON SCREENS IS IMPORTANT FOR COMMERCE AND FOR BRANDING. A COMPANY CAN NUMBER (& TRADEMARK) A COLOR IN A PARTICULAR SYSTEM, SO THAT COLOR CAN BE CONSISTENT ACROSS MEDIA.

THE NEW MUNSELL STUDENT COLOR SET
CHART VIII



COLOR PROPERTIES!

NAMING AND SYSTEMIZING COLOR CONTINUES WITH THE RECOGNITION AND USE OF THE 3 DIMENSIONS OF COLOR PERCEPTION/
A.K.A. COLOR PROPERTIES.

THESE PROPERTIES VARY IN NAME BUT ARE GENERALLY AGREED UPON IN DEFINITION:

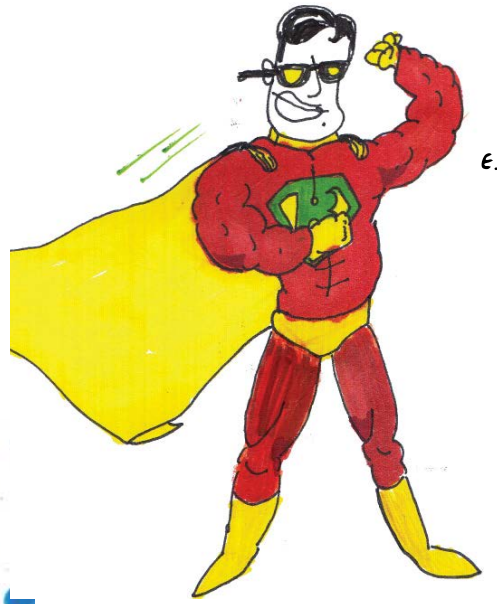
1. HUE (H)

CHROMATIC COLOR: THE PURE COLOR (PROPER NAME) WITHOUT TINT OR SHADE OR TONE
E.G. RED, GREEN, BLUE

2. SATURATION (S)

OR INTENSITY: LEVEL OF CLARITY, DEPTH, OR RICHNESS OF COLOR.
- ADDITIONAL NAMES FOR THIS PROPERTY: BRILLIANCE, CHROMA, TONE

E.G. BRIGHT BLUE, DULL BLUE, DEEP BLUE



3. BRIGHTNESS (B)

VALUE OR LUMINANCE:
LEVEL OF BRIGHT/LIGHTNESS (TINT) OR LEVEL OF DARKNESS (SHADE)

E.G. DARK BLUE, LIGHT BLUE.

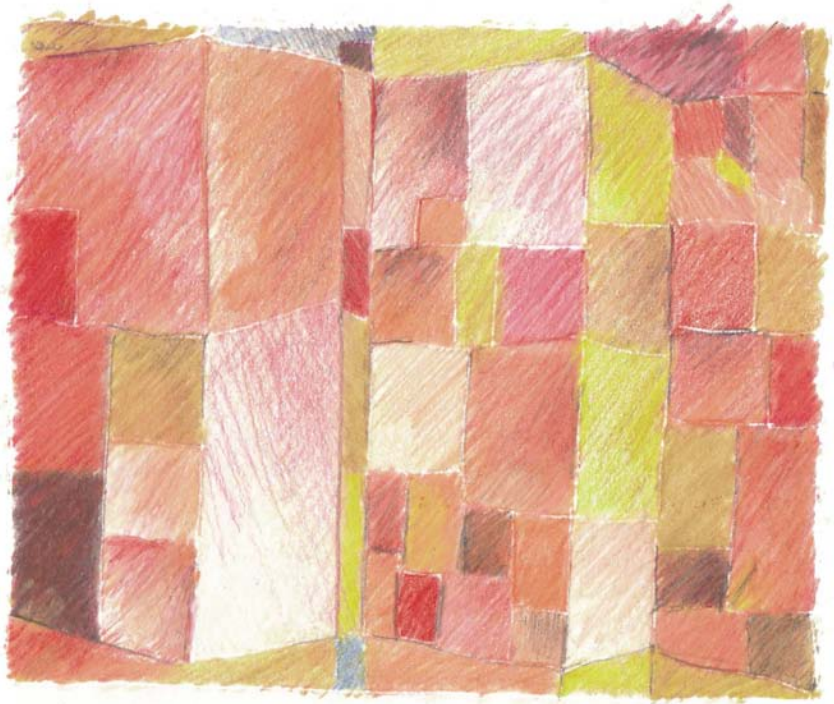
MONOCHROMATIC:
ONE HUE WITH A RANGE OF VALUES.

HOMAGE TO MATISSE

HARMONY IN RED

{HIGHLY SATURATED}

1908



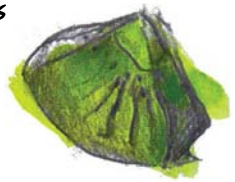
AFTER PAUL KLEE "CANTERA OSTERMUNDINGEN"
(1879 — 1940)

FLUORESCENT PIGMENT ON THE MOVE

SPECIAL PROPERTIES of COLOR

ACHROMATIC or NEUTRAL : W/O HUE.

- BLACK, WHITE, & GRAY ARE COLORS BUT NOT HUES
- BROWN TOO



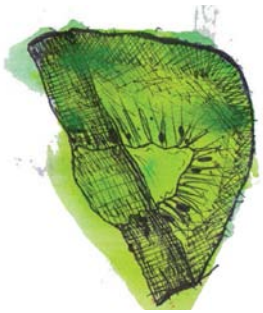
← PASTELS : HUES BOTH LIGHT AND BRIGHT

FLUORESCENT : ULTRA BRIGHT

IRIDESCENT : SINGLE SURFACE W/VARIOUS HUES RELATIVE TO THE ANGLE OF THE ILLUMINATION — LIKE SOAP BUBBLES.

METALLIC : SHINY DUE TO ACTUAL OR SIMULATED METAL ARTICLES

TRANSLUCENT : SEMI-TRANSPARENT



YELLOW, ORANGE, & RED COLORS FEEL WARM.

COLOR TEMPERATURE

- COLOR TEMPERATURE REFERS TO A PURELY VISUAL SENSATION THAT DOES NOT RELATE TO APPLIED HEAT.

- TEMPERATURE IS A PROPERTY OF COLOR AND HELPS TO IDENTIFY AND DESCRIBE IT.

AND, COLOR TEMPERATURE IS NOT FIXED. A SINGLE HUE WILL FLUCTUATE IN TEMPERATURE RELATIVE TO THE COLORS THAT ARE ADJACENT TO IT. YELLOW WILL LOOK WARMER WHEN SURROUNDED BY ORANGE OR RED, BUT WILL LOOK LESS WARM WHEN PLACED W/ GREENS & BLUES.

BLUE, GREEN, & VIOLET FEEL COOL

READY TO MIX IT UP OR PICK IT OUT? (OF THE CHAOS)

RECOGNITION OF COLOR PROPERTIES LEADS TO A FACILITY FOR MIXING COLORS ON SCREEN OR W/ SUBTRACTIVE COLOR MEDIA. SYSTEMS ARE NECESSARY FOR SELECTING COLORS WITH CONSISTENCY ACROSS A VARIETY OF INDUSTRIES OR SIMPLY FOR SELECTING PAINT COLORS FOR A HOME.

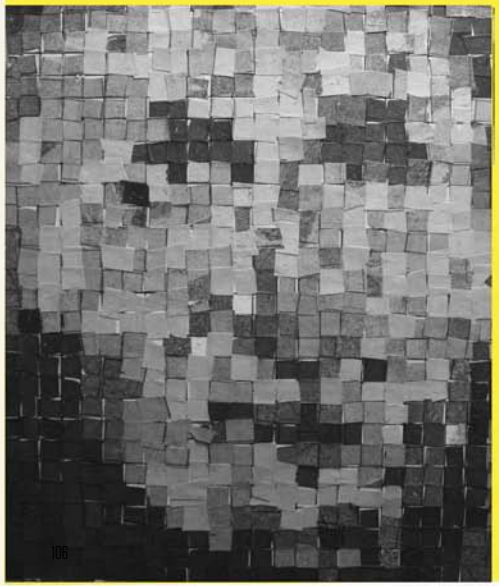
4. SUMMARY
& LEARNING OUTCOMES

We understand our world through comparison and connection. The describing and naming of color relates to their historic use, pigment sources, cultures, and environments.

Colorful names also drive much of our economy by creating emotional connections to the consumer. To establish order out of the chaos of descriptive names, color systems identify and classify for universal use.

Buttered toast anyone?

+ Differentiate and organize names of color relative to culture and environments.
+ Classify and exemplify color identity systems.
+ Identify and demonstrate color properties.
+ Create and design with color properties in mind.



EXERCISES
& PROJECTS

1. NAME THAT COLOR

GROUP ACTIVITY

A. COLOR NAME SURVEY: Design a survey to chart responses to color naming.

SUPPLIES: Use paint swatches, color aid paper, or other printed matter as samples for use in the survey. Also needed is a laptop with graphics software and color printer and compatible paper.

COMPOSE AND SHARE RESULTS

Form teams of two or three members.

- Determine demographic of the group to be surveyed.
- Create two control groups to compare on the basis of gender, age, and ethnicity.
- Write and format a survey that asks basic color naming questions.
  - Name the color.
  - What associations do you have with this color?
  - Do you like it? (the color sample)
  - Name your favorite color.
- Gather or make color swatches.
- Implement survey; record results.
- Design a chart that visually displays (infographic) results. Print.
- Share and analyze results in a full group critique.

2. ILLUSTRATING COLOR PROPERTIES

GROUP ACTIVITY

A. MUNSELL HUE, VALUE, AND CHROMA CHARTS: Create a Munsell 3D color wheel (see model on "Notes on Color" Pinterest board).

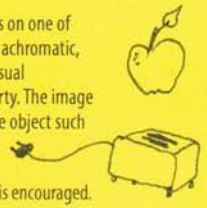
SUPPLIES: Acrylic paint and related supplies. Or, computer graphics software, color printer and compatible paper. Additional construction materials needed to make the color wheel such as wooden or metal dowels and rigid sheets of clear acrylic.

COMPOSE AND SHARE RESULTS

- Full class team project.
- Determine distribution of assignments.
- Create color charts – each a single hue with saturation and value scale.
- Construct the 3D wheel.
- Critique success throughout the project.

INDIVIDUAL ACTIVITY

A. EXPRESSIVE PROPERTIES: With a focus on one of the color properties or a group (hue, value, achromatic, etc.), create an image that illustrates the visual dimension and range of the selected property. The image can be a self-portrait or an image of a single object such as an apple, bird, toaster, car, etc.



SUPPLIES: Use of subtractive media (paint) is encouraged. However additive media (light) is acceptable.

COMPOSE AND SHARE RESULTS

- Select a property of color to explore such as value, saturation, or hue, or select a group dimension such as achromatic, monochromatic, or warm or cool temperature.
- Create the image using only one property of color but exploring its full range.
- Critique results with a group.

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