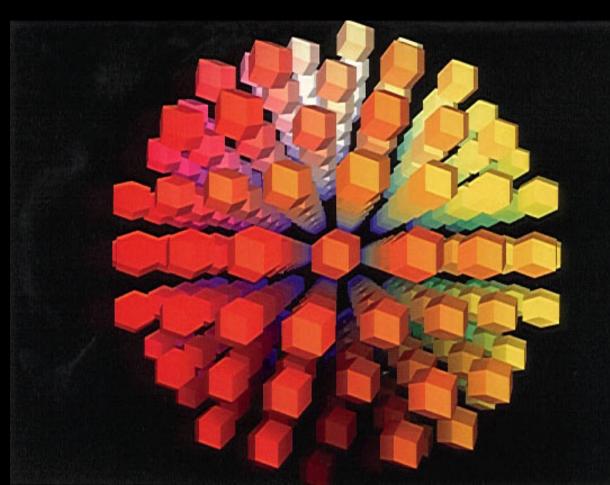
- Color Mixing
  Intro
  (ch. 7 pp. 77ff)
- Liquitex Color Map

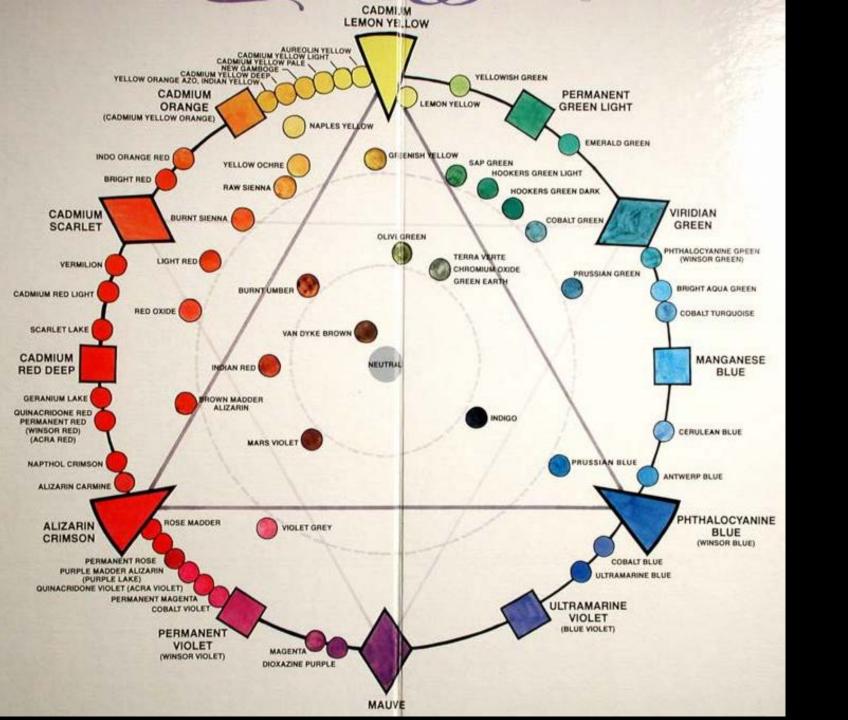
- Value Staff
- Intrinsic Value Staff

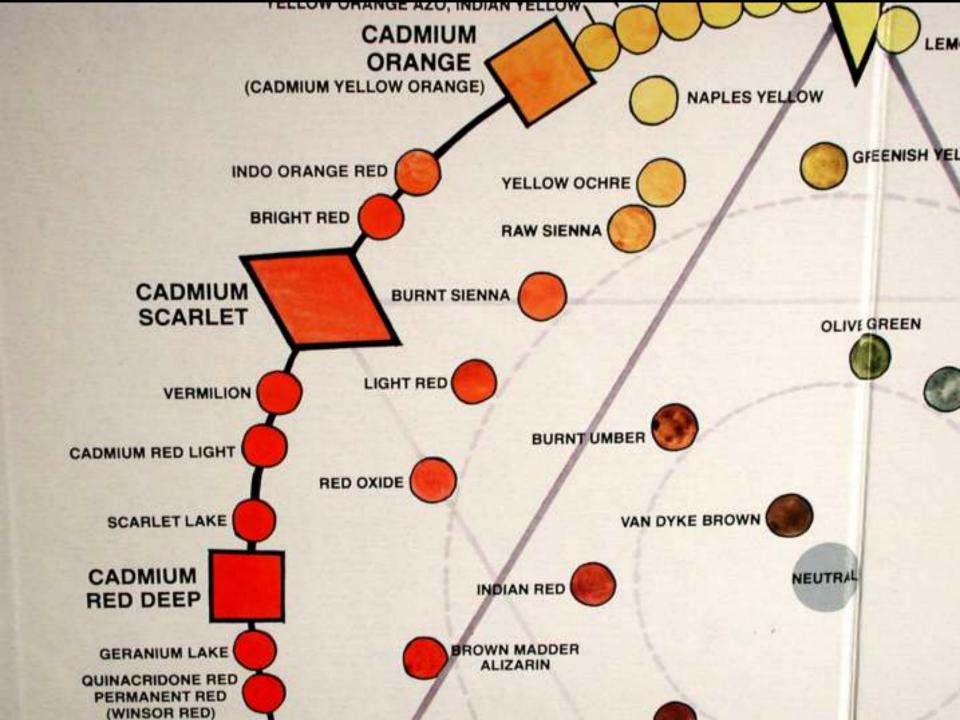
### Color Theory

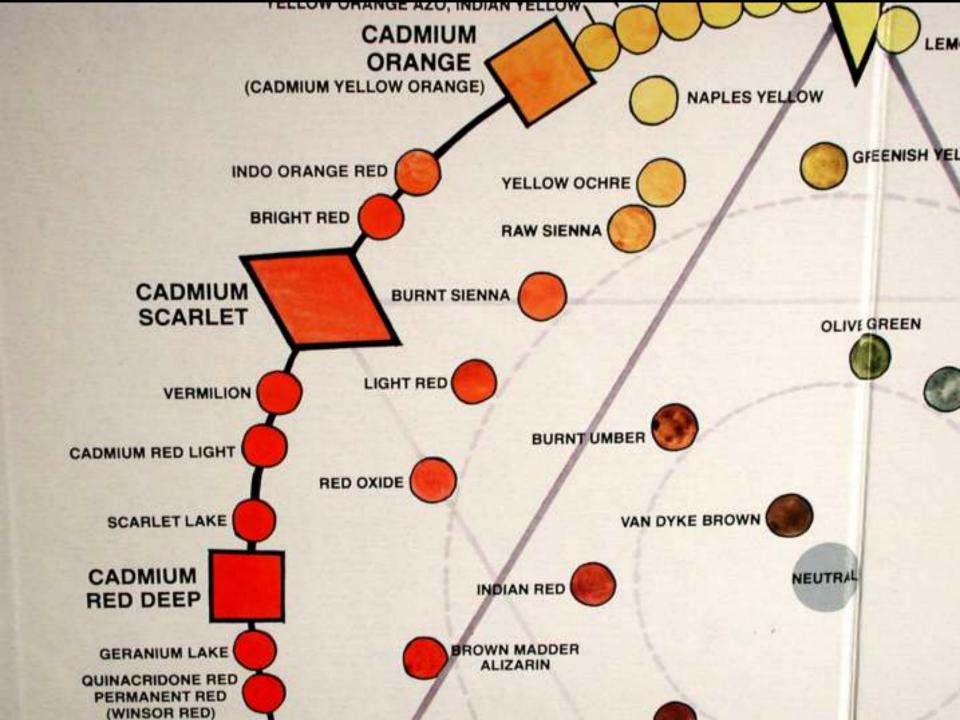


- Munsell color notation (HVC)
- HC color mapping
- HV color mapping
- Strait Line Mixing (2clr/3clr "Y")
- 1st Mix Set

Acrylic Cleanup







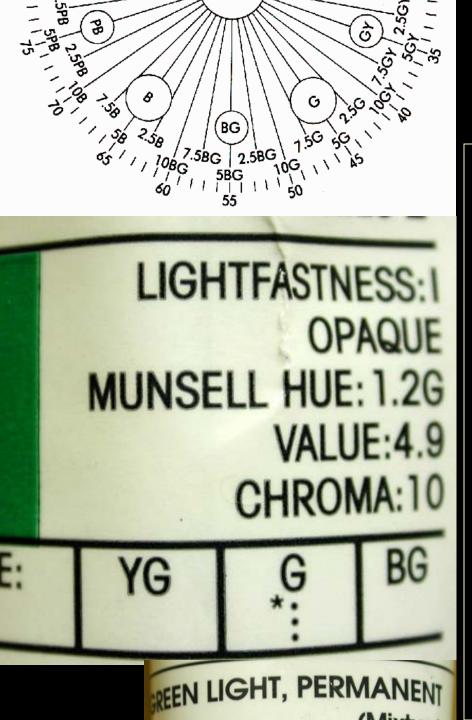
## N 108G 2.58G

# REEN LIGHT, PERMANENT (Mixture) VERT PERMANENT CLAIR VERDE CLARO PERMANENTE OPAQUE

### Munsell color notation system

- 5 Primaries (R, Y, G, B, P)
- 5 Secondaries (YR, YG, BG, BP, RP)



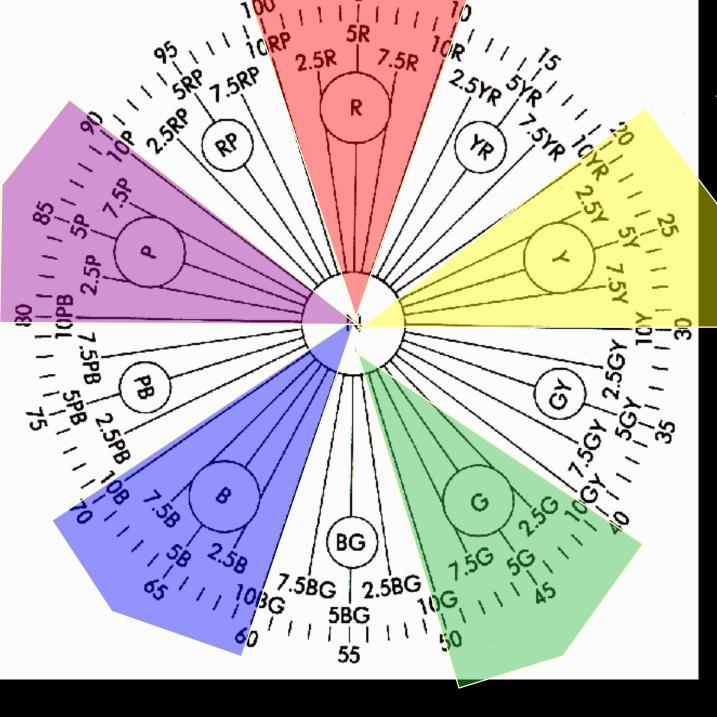


### Munsell color notation system

- A color *specification* system
- A color specification provides a way of describing a specific color using *words* or *numbers*.

(in the same way that f# partially describes a particular musical pitch...)

- Designers and producers must be able to communicate accurate colors for products, paints, dyes, etc.
- RGB, CMYK, HSL, Pantone, Munsell...
- H: 1.2 G, V: 4.9, C: 10

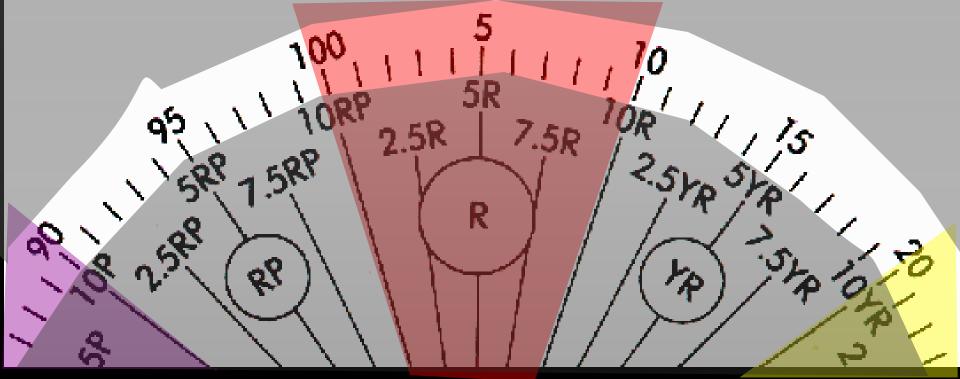


Munsell color wheel

10 hues

Either 45 = 5G 78=PB8

100=0=10RP



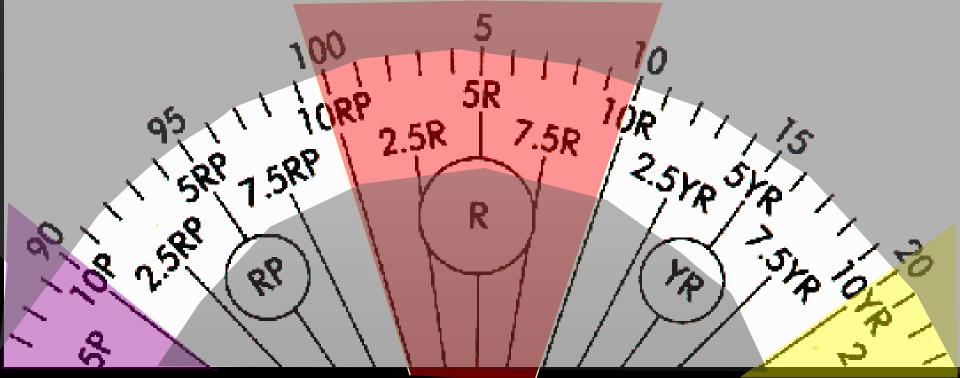
Munsell color wheel:

2 different huespecification options

• Notice the outer numbers — hues are specified from 0-100

$$95 = RP$$
$$5 = R$$

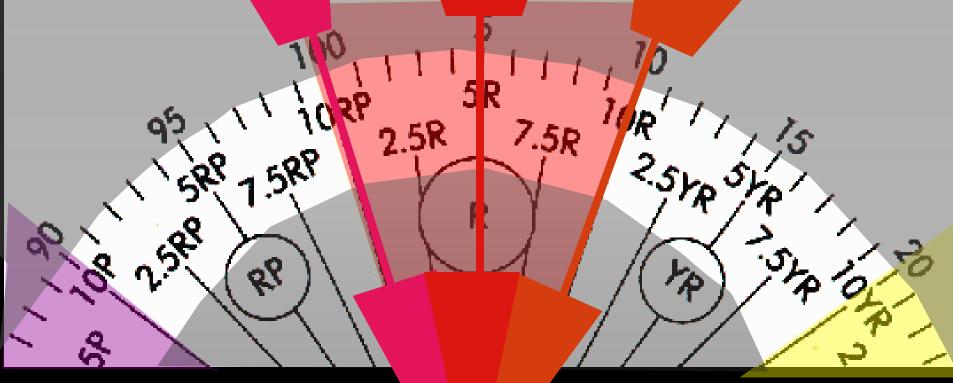
• 15 = YR (orange)



Munsell color wheel:
2 different huespecification options

- The inner numbers range from 0-10.
- There are 10 Hue Sections.

  Each section is a sort of neighborhood of very similar hues.
- R, YR, Y, YG, G, BG, B, BP, P, RP



Munsell color

wheel:

• 1 R is a RRP -- a slightly purple red.

2 different hue-•

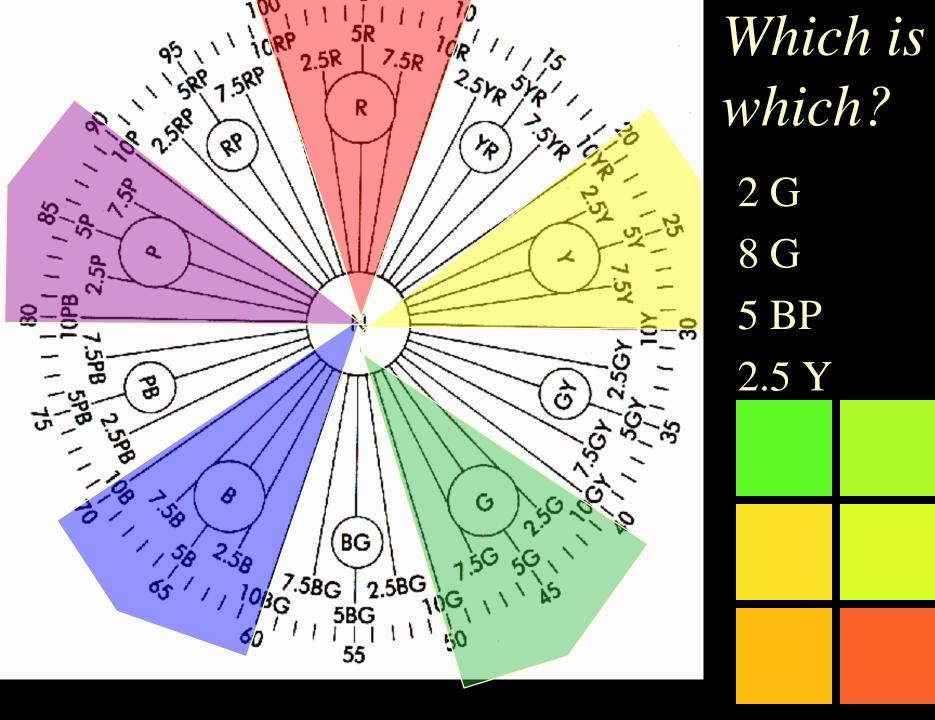
5 R is "ideal", primary red

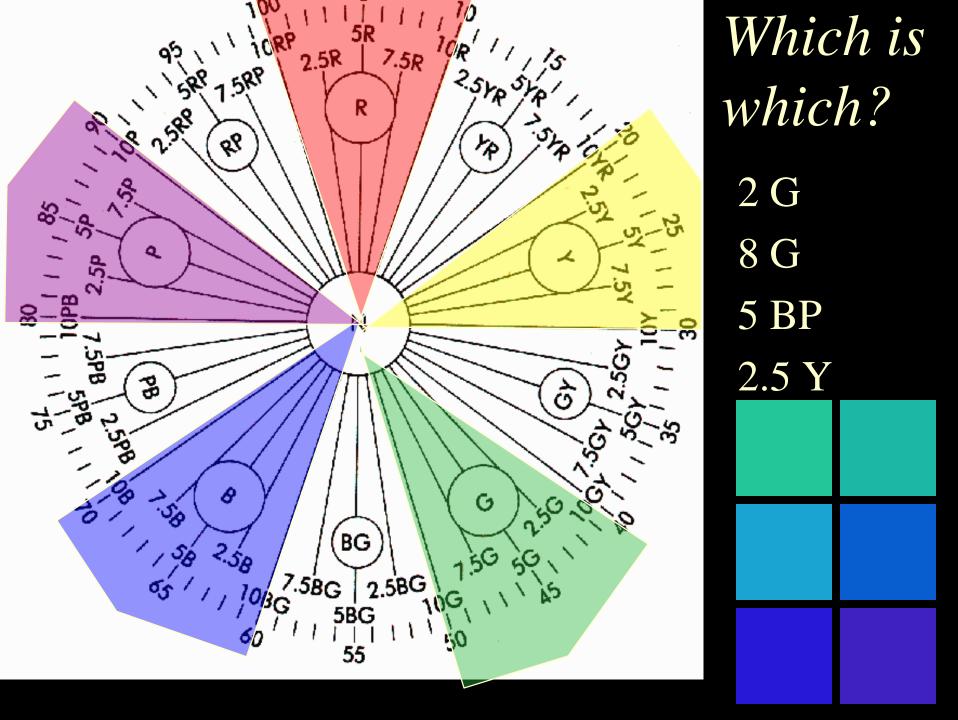
specification

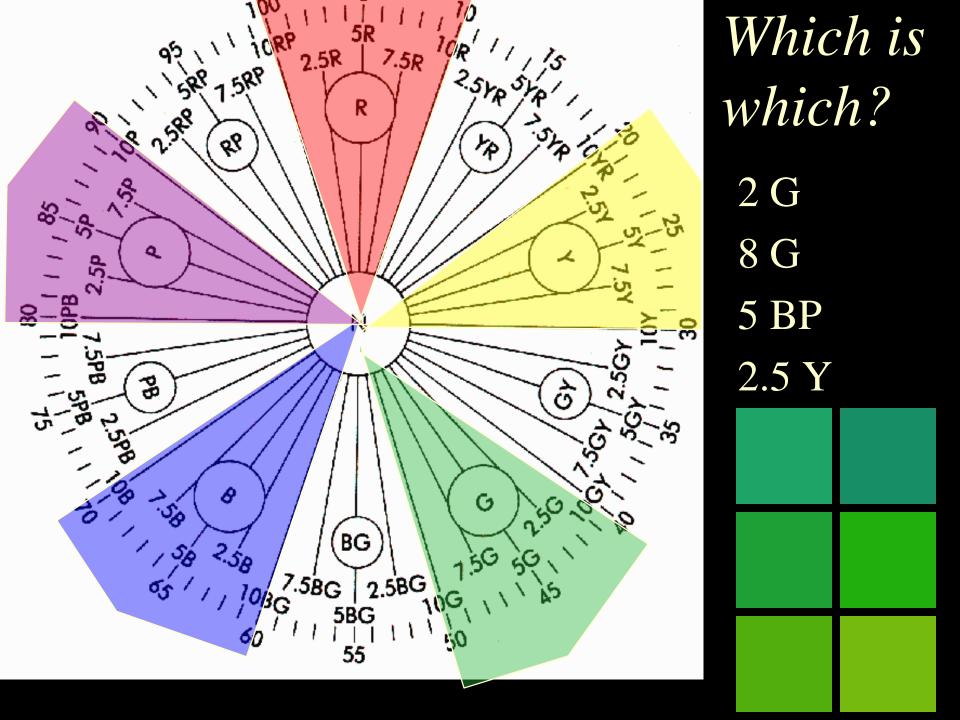
10 R is a RO (and is the same as 0 YR)

options

• We will only use the 0-10 Hue specifications — they are more intuitive.







#### High Viscosity / Heavy Body

Haute Viscosité • Cuerpo Espeso

Hohe Viskosität • Alta Viscosità

Relative Hue Ton Relatif

Munsell Hue 8.58YR Value 7.12 Ton Munsell

Chroma<sub>13.04</sub> Saturation

Transparen t□ Lightfastness: I-Excellent

Vehicle: Acrylic Polymer Emulsion Pigment: Diarylide Yellow

(PY 83 HR 70)



PROFESSIONAL

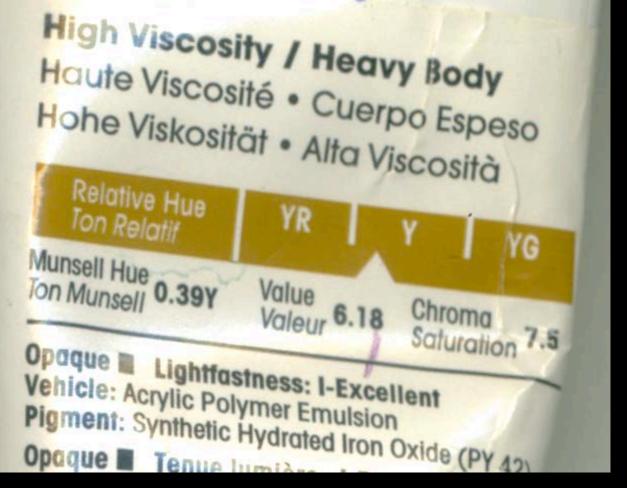
HEAVY BODY

YELLOW ORANGE AZO JAUNE D'OR

AMARILLO NARANJA AZO GIALLO ARANCIO AZO GELBORANGE AZO

ies 2 Itastness I

Transparent Single Pigrent









#### High Viscosity / Heavy Body

Haute Viscosité • Cuerpo Espeso

Hohe Viskosität • Alta Viscosità

Relative Hue Ton Relatif

Munsell Hue 4.22YR Value 2.63 Saturation 0.92

Opaque Lightfastness: I-Excellent Vehicle: Acrylic

Polymer Emulsion Pigment: Calcined Natural Iron Oxide

Containing Manganese (PBr 7)

Opaque Tenue lumière : I-Excellente Liant : Emulsion



Hone Viskosität • Alta Viscosità Relative Hue Ton Relatif Munsell Hue 8.58YR Value 7.12 Chroma<sub>13.04</sub> Ton Munsell



AMARILLO NARANJA AZO GIALLO ARANCIO AZO GELBORANGE AZO



CADMIUM ORANGE HUE (Brilliant Orange) ORANGE DE CADMIUM (IMIT.) NARANJO DE CADMIO IMIT.

### HEAVY BODY

YELLOW ORANGE AZO

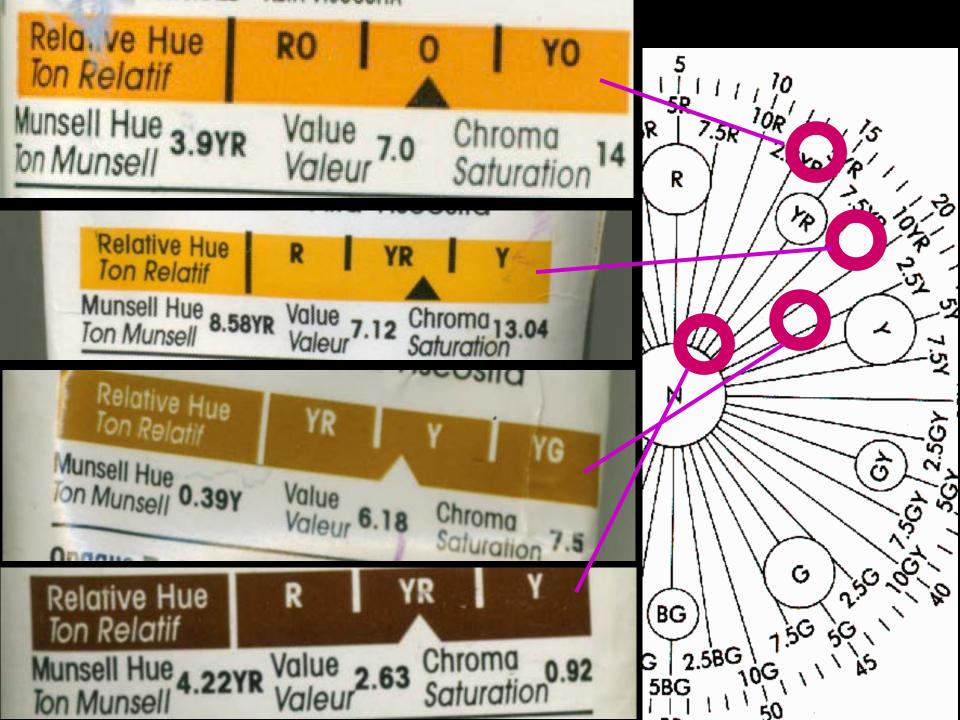
JAUNE D'OR

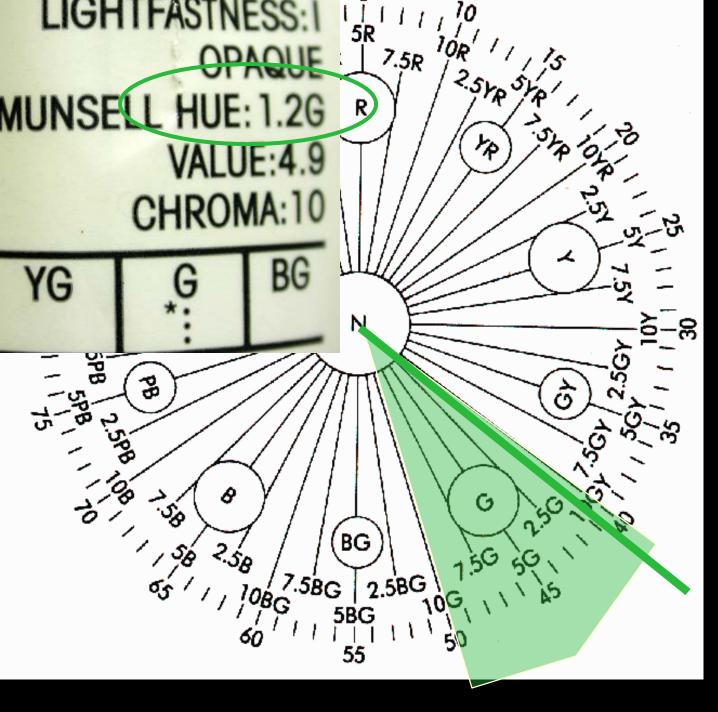
AMARILLO MARILLO

AMARILLO NARANJA AZO

YELLOW OXIDE JAUNE DE MARS AMARILLO DE MARTE GIALLO DI MARTE MARSGELB

BURNT UMBER
TERRE D'OMBRE BRÛLÉE
TIERRA DE SOMBRA TOSTADA
TERRA D'OMBRA BRUCIATA
UMBRA GEBRANNE





Munsell color wheel

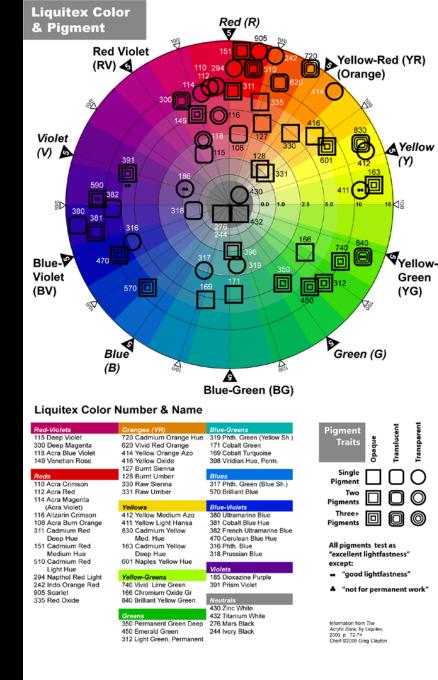
Hue = 1.2 G

G = Green section

1.2 = very close to YG

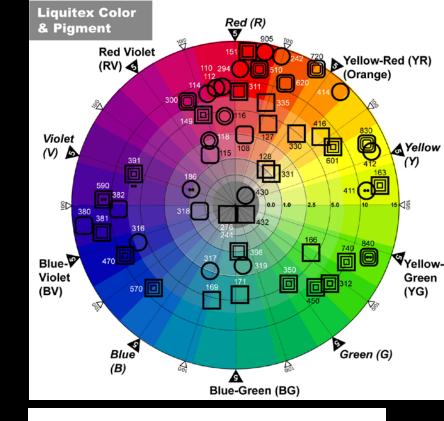
## Liquitex Color & Pigment Chart

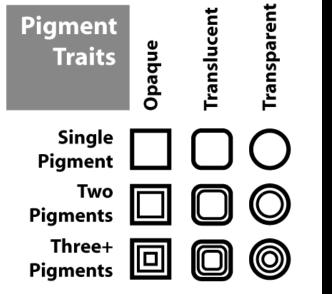
- This chart organizes many of the colors available in the Liquitex product line of acrylic paints.
- Hue-Chroma position.
- Pigment: transparent, translucent, opaque
- Pigment: single-pigment, 2, 3+
- Pigment permanency



### Pigment Transparency

- In general,
- Transparent colors offer richer mixes (thus higher chroma can be maintained).
- Glazes and washes are possible.



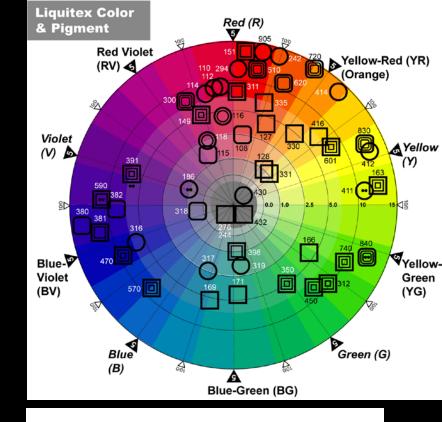


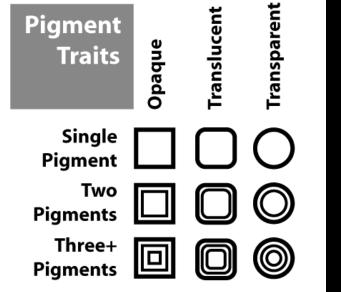
### Number of Pigments in a paint

In general

1-pigment colors offer richer mixes

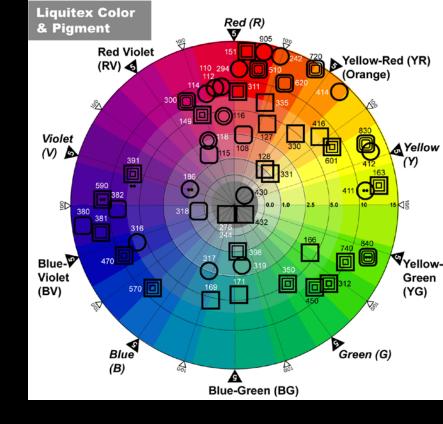
(higher chroma can be maintained).





#### Pigment Permanency

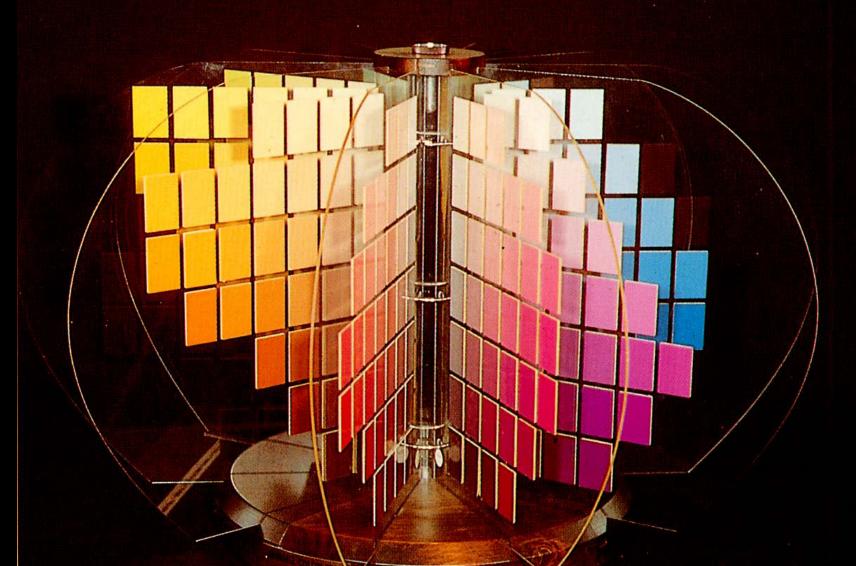
- Most artists pigments are expected to offer excellent lightfastness that is, the color should not fade over time under normal viewing conditions.
- Sunlight (ultra-violet light, particularly) breaks down pigment molecules and so alters color over time.
   Some pigments/chemicals are more resilient to UV light.



All pigments test as "excellent lightfastness" except:

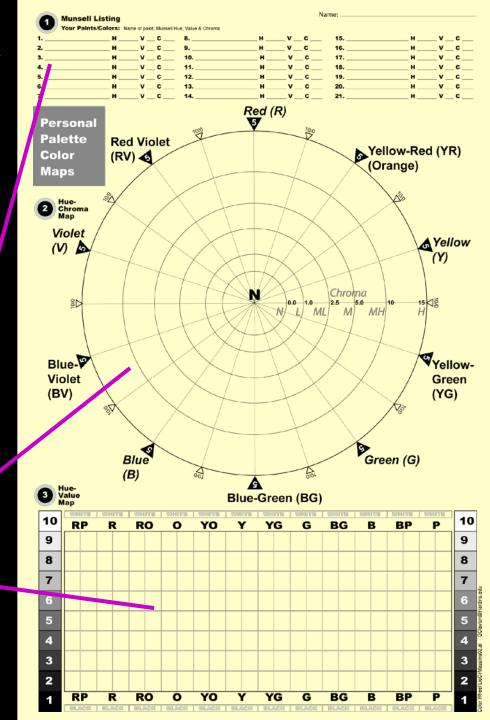
- "good lightfastness"
- "not for permanent work"

### Three dimensions of color - Munsell's color model



### Personal Palette Map

- Identify the colors that you have in your set—your personal palette.
- 1) List name, hue, value and chroma of each tube.
- 2) Graphically locate huechroma positions.
- 3) Graphically locate huevalue positions.



1	Munsell List Your Paints/Cold	_	
1		н	
2.		Н	

3. \_\_\_\_\_ H \_\_\_ 4. \_\_\_\_ H \_\_\_

6. H

Name: \_\_\_\_\_

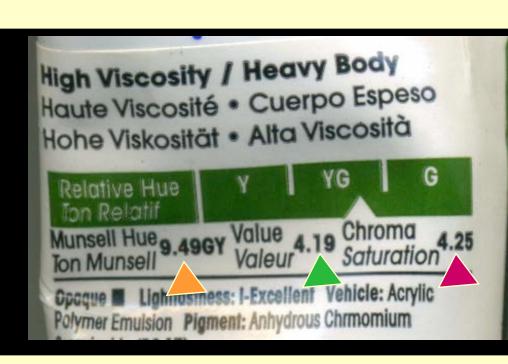
lors:	Iors: Name of paint; Munsell Hue, Value & Chroma							
_ H _	v	8	Н_	v _	_ c	15	н	v c
_ H _	v	9	Н_	v _	_ c	16	н	_ v c
_ H _	v	10.	н	v _	_ c	17	н	_ v c
_ H _	v	11.	Н	v _	_ c	18	н	v c
_ H _	v	12.	Н	v _	_ c	19	н	_ v c
_ H _	v	13.	Н	v _	_ c	20	н	_ v c
_ H _	v	14.	Н	v _	_ c	21	H	v c



For each color/paint you

have:

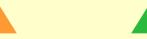
List name, hue, value & chroma.



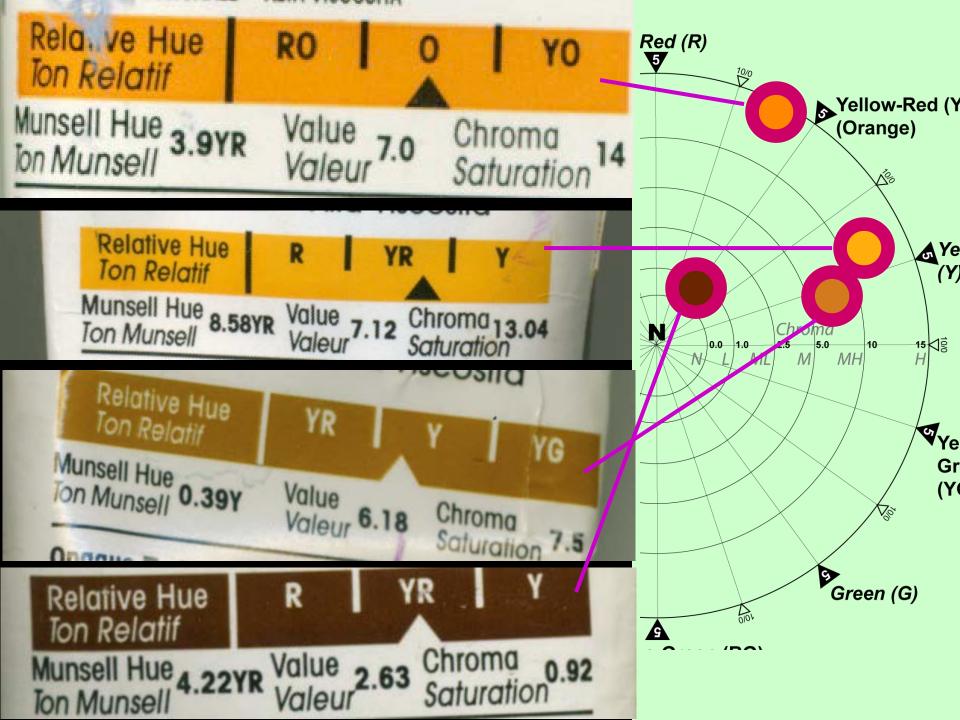


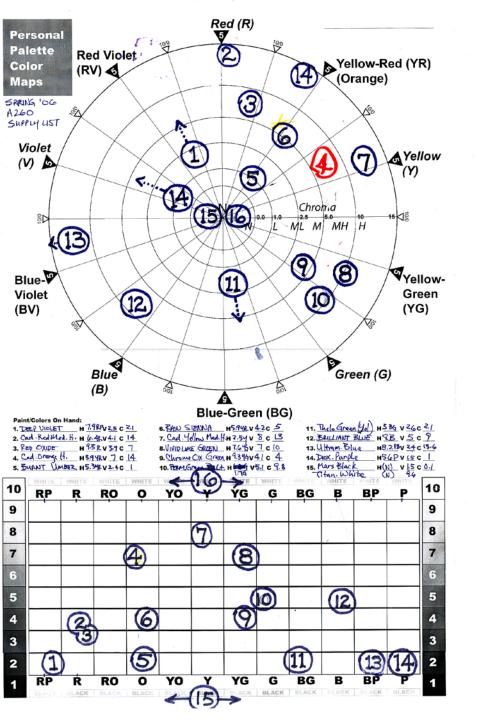
1. Chromium Oxide Green

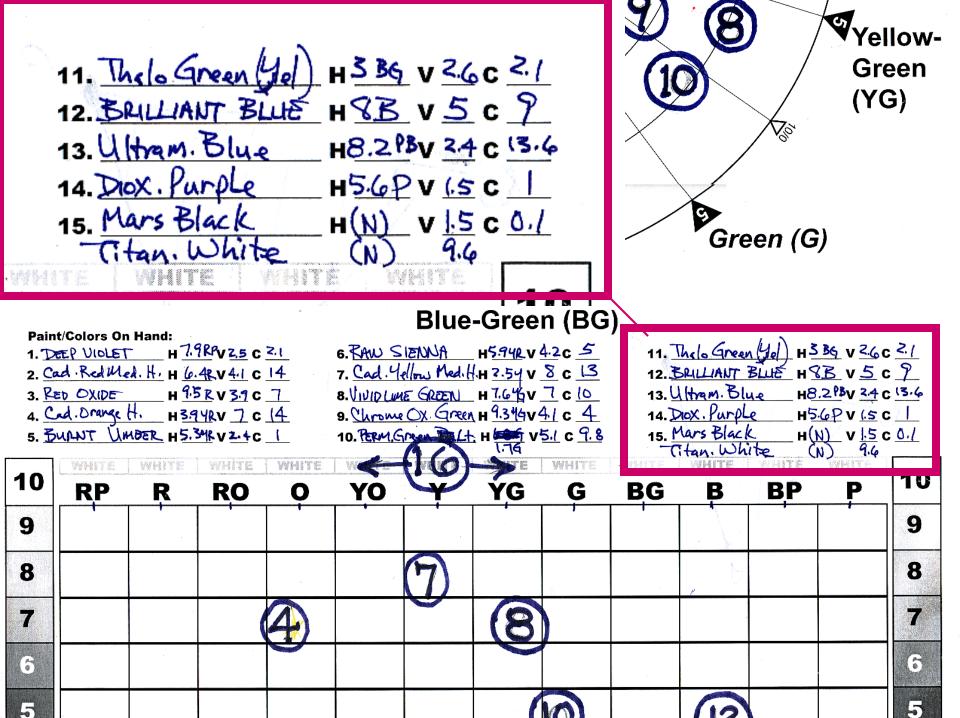
H 9.49GY V 4.19 C 4.25

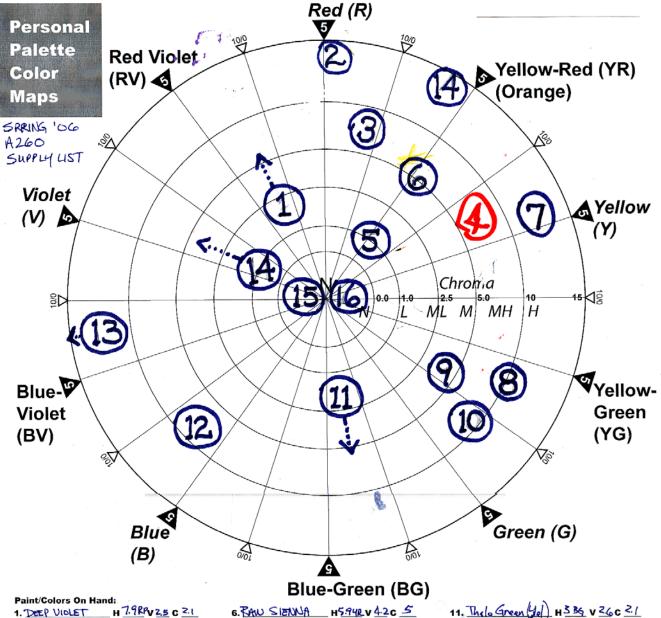












- H 7.9 RPV 2.5 C 2.1 1. DEEP VIOLET
- 2. Cad Red Med. H. H 6.4R. V 4.1 C 14
- H 95 R V 39 C 7 3. RED OXIDE
- 4. Cad. Drange H. H394RV 7 C 14 5. BURNT UMBER H5.34RVZ.+C 1
- 6. RAW SIENNA H594RV 4.2C 5 7. Cad. Yellow Med. H. H 2.54 V 8 C 13

  - 8. VIVIDLUME GREEN H 7.646V 7 C 10 9. Chrome Ox. Green H 9.344 V 4.1 c 4

10. PERM. Grand Lt. H 1776 V5.1 C 9.8

- 12. BRILLIANT BLUE H&B V 5 C 9

- 13. Ultram. Blue
  - - 14. Diox. Purple
- H8.288V 34 C 13.4 H5.6PV (5 C )

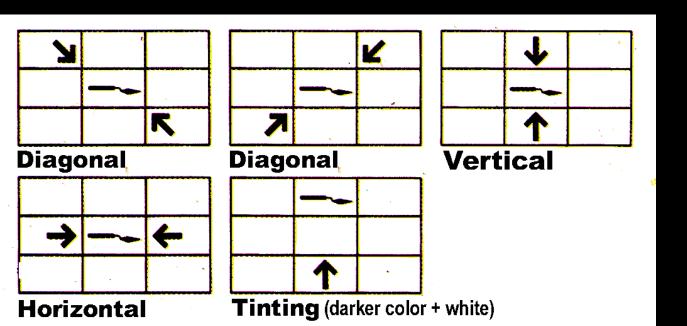
  - 15 Mars Black H(N) V 1.5 C 0.1 Titan. White

Pain	t/Colors On	Hand:				Diue	-Gree	II (DG	ARTICLE STATE OF THE PARTY OF T				
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	3. RED OXIDE H 95RV 39 C 7					HE GREEN				13. Ultram. Blue H8.2PBV 24 C 13.6			
	ad. Drange		LYRV 7 C			e Ox Green			14.	nox. Purpl		6P V (5 C	
5. 🕏	NV TURN	ABER HS.	54RV 2.4C		10. TERM.	Smen Lt	H (76	<u>5.1</u> c <u>4.8</u>	15. [	lars Black itan. Whi	Lips (V	1) v <u>1.5</u> c	: <u>0./</u>
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	RP	R	RO	0	YO	Y	YG	G	BG	В	BP	P	1
		BLACK	BLACK	BLACK	BLACK		BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	
						U 27							

Blue-Green (BG)

#### Straight-Line Mixing Method

- A simple and reliable strategy for mixing colors involves finding two colors/paints that are "on a line" with the color you are trying to mix.
- The rule: you can mix any color on the line between any two colors. \*
- \*However, there are situations in which this doesn't quite work as expected.



### Color Map & Mixing Guide

- Shows Hue and Value (chroma only partially represented) (10-step value scale, 12 hues)
- Imagine a flattened cylinder a 3D model of color.

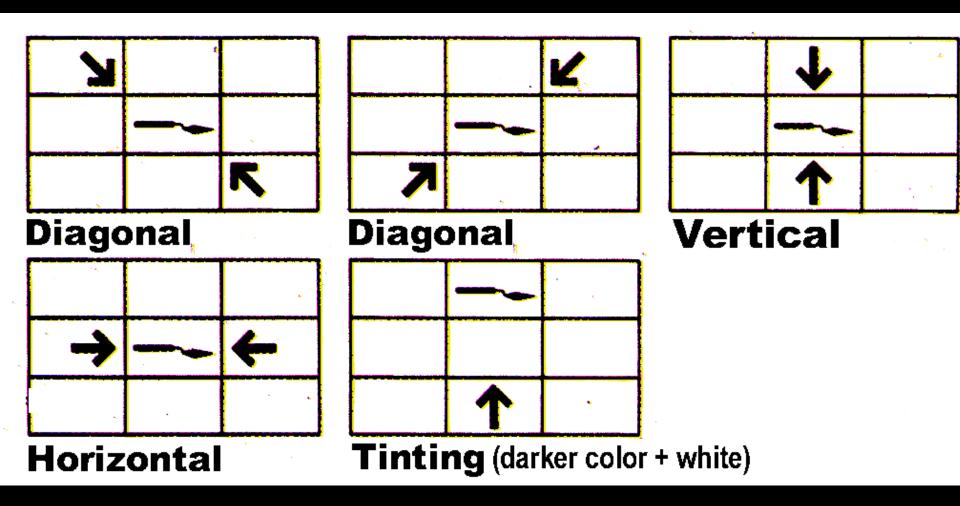


#### Mix samples located on the color map.

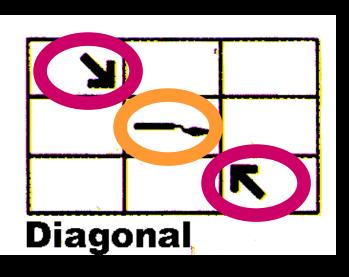
- Pick the "target" colors (your choice)
- Use "straight line" method to mix your targets
- Select your best source colors.

• Mix & paint samples.

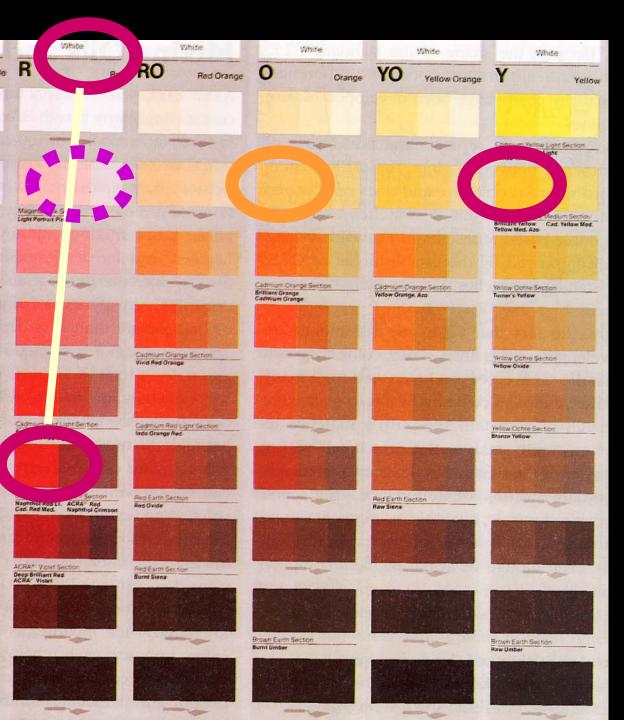
## Straight-Line Mixing Guide



## Straight-Line Mixing Guide

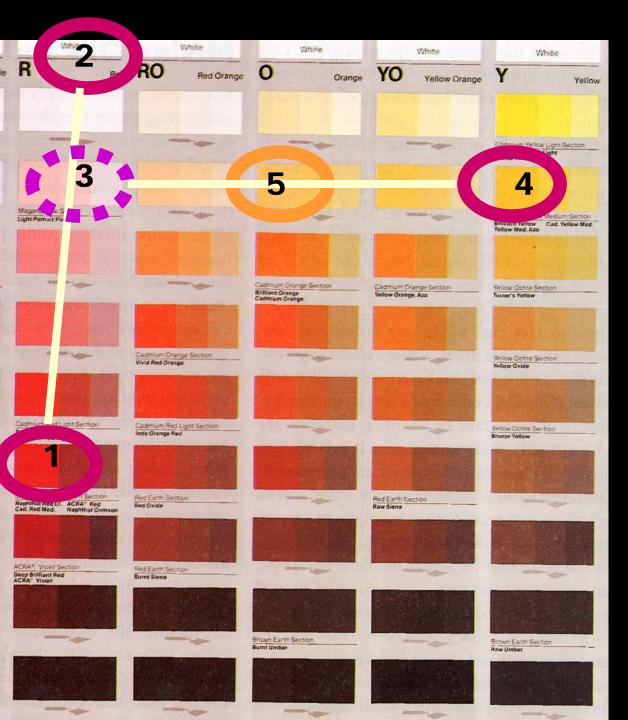


- Target Color the color you are aiming to mix.
- Source Colors
  the particular paints/colors
  that you have available.
  The colors that you mix
  with.



#### Y- Mix Guide

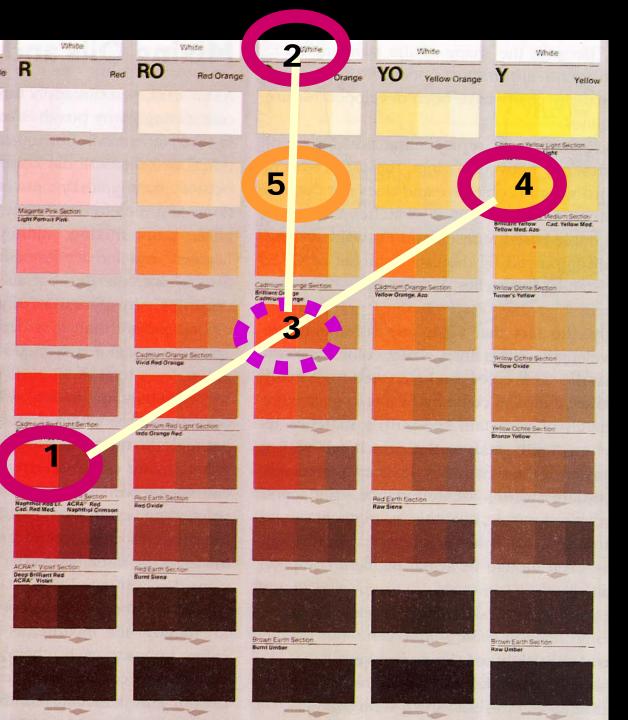
- This elaborates on straight-line method — it uses the same technique twice
- Target Color
- Source Colors



### Y- Mix Guide

Use 1 & 2 to mix 3

Use 3 & 4
 to mix 5 (target color)



#### Y- Mix alt

- When you plan a color mix, there are usually several ways to think about it different routes to the same destination.
- Here we mix the hue before getting the value right — which is generally good practice.
- Use 1 & 4 to mix 3
- Use 3 & 2
   to mix 5 (target color)

See p. 76

## General Mixing Rule: use colors closest to "target" color.



If your target color is "T" and you have colors 1, 2 & 3, do you mix with #1 or #2?

#2 is closer to the target color.

It will usually offer a) a richer (higher chroma) potential mix and b) will have less critical mixing proportions.

(its easier to mix)

## Breaking the rules: primaries from secondaries.

- Can it be done?
- Can you mix a red from a violet and orange?
- A Blue from a green and violet?
- A yellow?



## Liquitex Color Map

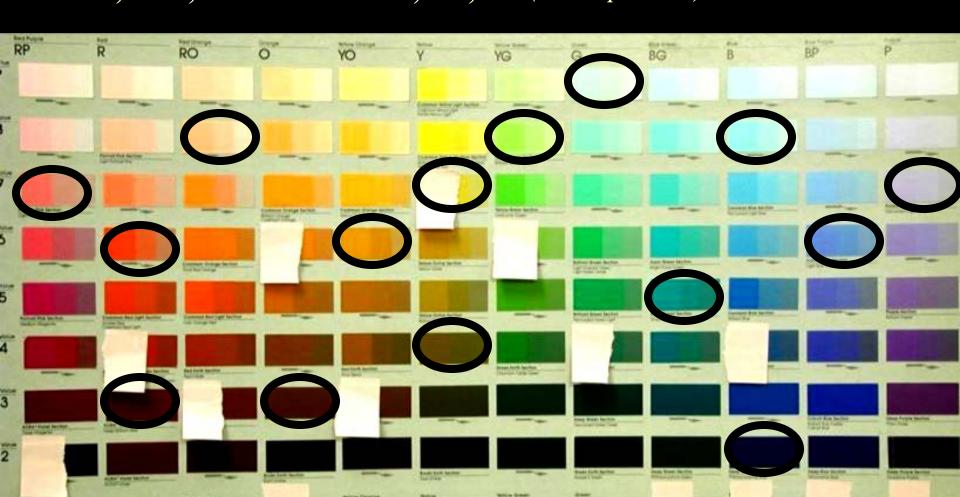
Note differences between CMYK (textbook) and Paint versions.



#### Mix 15 samples of assigned hues and values.

See p. 96

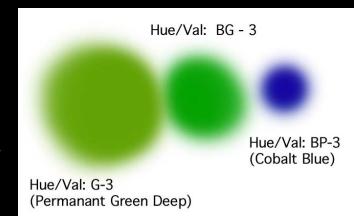
- identify the "target" colors.
- Target colors: RP7, R6, RO7, O3, YO6, Y7, YG8, G9, BG5, B8, BP7, P7 B2, R3, Y4 (without primaries)



#### Next:

- By 12:30: mix 3 of the assigned colors
- By next class:
   Mix the first 7 of 15 assigned colors from the
   Liquitex color mixing chart.
- Mix B2, R3, Y4 (primaries) \*without\* using primaries.
- Fill out color map with your paints.

- Paint samples on card-stock plates (up to 4 mixes per plate). (target/final color sample should be at least 1")
- Show source colors in approximate proportions needed to mix target color.
- Label/identify source colors

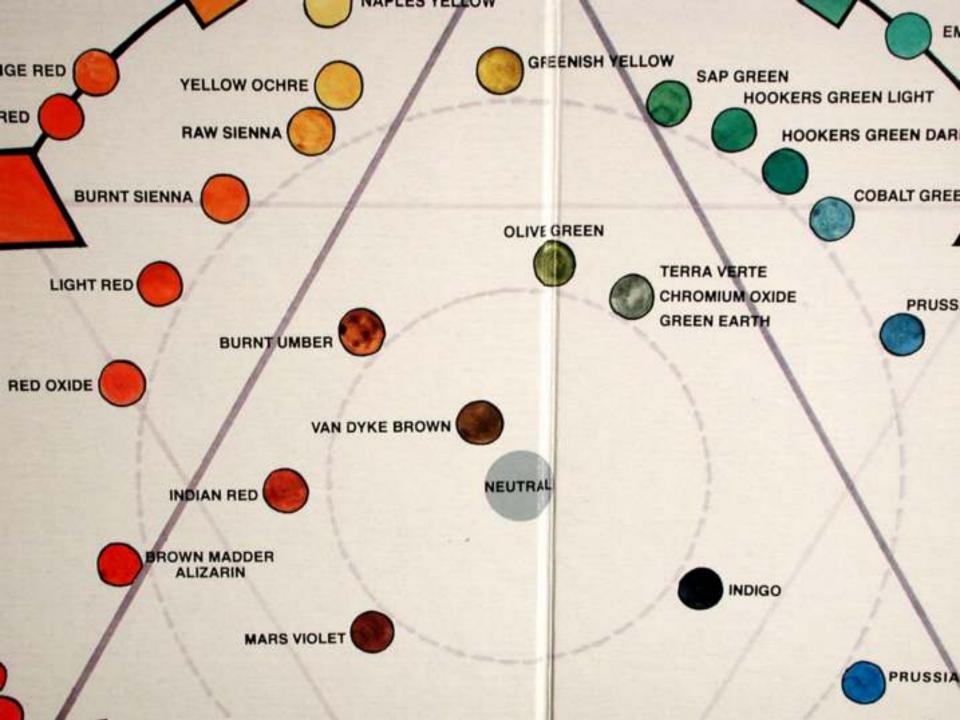


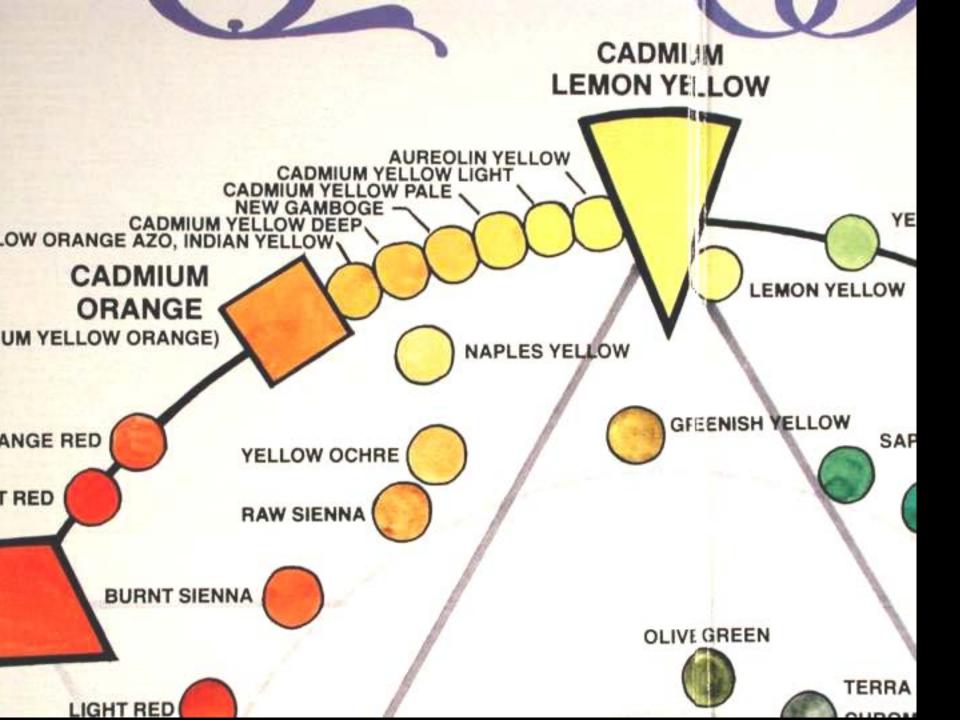
- Munsell color notation (HVC)
- HC color mapping
- HV color mapping
- Strait Line Mixing (2clr/3clr "Y")
- 1st Mix Set

Acrylic Cleanup

#### LIQUITEX ACRYLIC COLOR MAP & MIXING GUIDE iquitex 0 RO RP YO YG BG Select Steam Section Value and Green Ages Steam Section Sugar Pages Steam Salar Octor Section Brittani Grant Saufter Applied Fire Section. Continues that legist benfore inco-language feet 4 Green Starth Section. 3 2 G YG YO RO RP R Date Cook Section tenneroptive 74 Discharge # 500 Management S.C. Name Of Street, Street, or other Charles Manager 8.5 DESCRIPTION OF REAL PROPERTY. Comp Pages Service COMP NAME AND ADDRESS OF THE OWNER, SAME And in case of Feb.









#### Mix 12 samples of varied hues and values.

• identify the "target" colors.

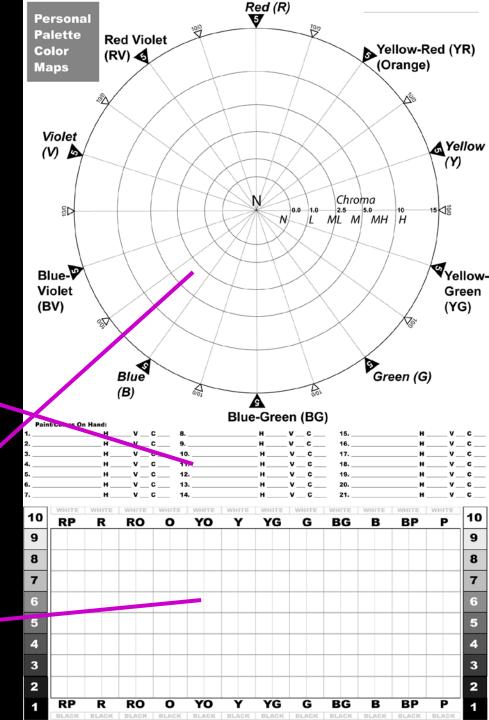
See p. 96

Target colors:
 RP3, R6, R07, O5, Y08, Y4, YG8, G9, BG5, B2, BP8, P7



## Personal Palette Map

- Identify the colors that you have in your set—your personal palette.
- List name, hue, value and chroma.
- Graphically locate huechroma positions.
- Graphically locate huevalue positions.

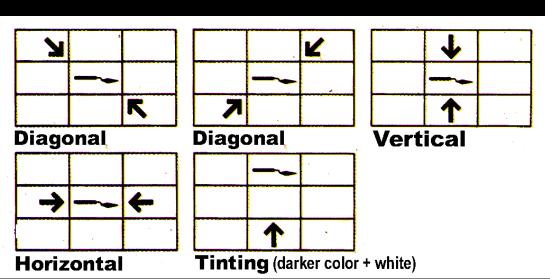


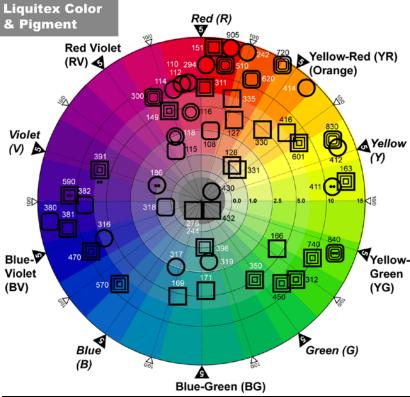
### Straight-Line Mixing Method

• The rule: you can mix any color on the line between any two colors. \*

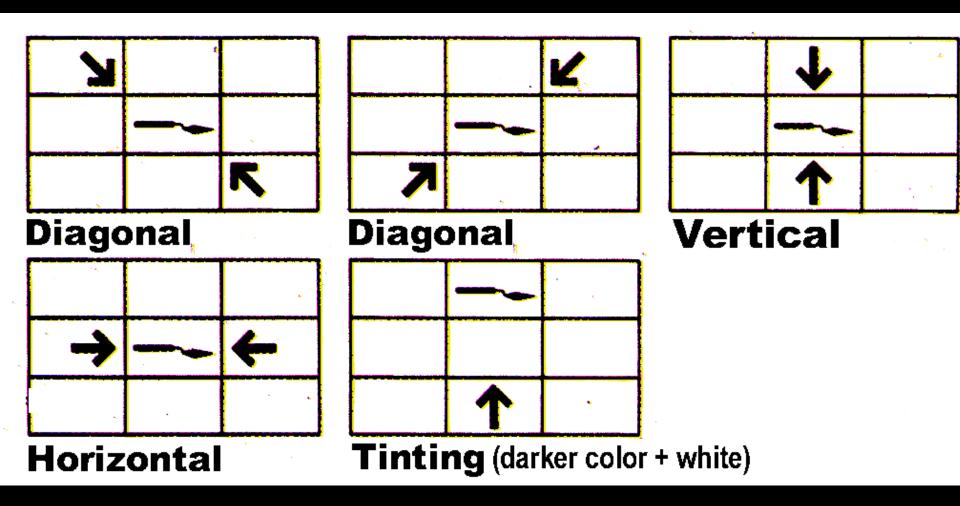
\*However, there are situations in which this doesn't quite work as

expected.





## Straight-Line Mixing Guide

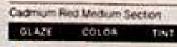


• Glaze and Tint samples at bottom of Liquitex Color Map













- Glaze: a thin, transparent layer of paint/color.
- Usually used to modify the color underneath. The undercoat and the glaze colors are mixed because of the transparency of the glaze.
- In acrylic: easy glaze: use water to thin paint to water-color-like consistency.

  Better glaze: add acrylic medium to paint.

  (acrylic medium is basically paint withOUT any pigment)



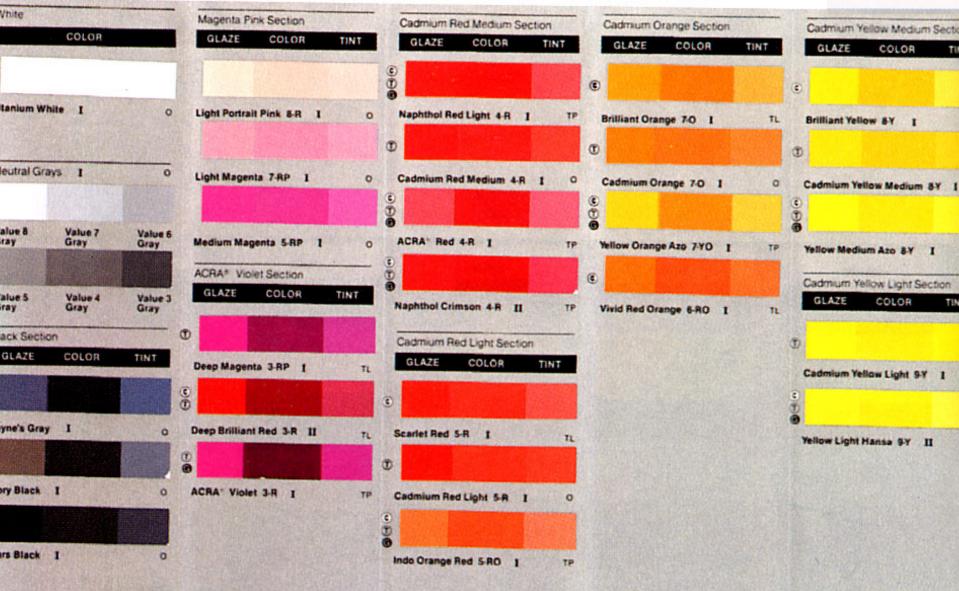
- Tint:
  - a) a high-value color, particularly, a color that is higher than the intrinsic value of that color's hue.
- B) paint mix that has had white paint mixed in.



- Both glazes and tints offer means of raising the value of a (painted) color.
- Glazes rely on a light underpainting.
- Tints rely on white mixed into the paint.
- Effects vary according to the opacity/transparency of the particular pigment.



### Glaze and Tint Samples



## "Strait Line Mixing" technique.

- Identify "target" color. This is the color you want to mix.
- Assess the hue, value, and chroma of the target color.
- Assess the "source" colors you have available. These are the colors that you can mix with – the tubs/jars of color you own.
- Identify the colors nearest your target color.
- Find the source color nearest your target color.

# Strait Line, "Y", & Adjustments

- Try the strait line method to find what colors are on the either "side" of the target color.
- If you have two colors that make a strait line through the target color, you can begin to mix.
- You may have to do a "Y" mix using three colors, rather than two.

#### Think about...

- Consider how you will adjust the hue. (strait line, "Y"?)
- Consider how you will adjust the value (tube colors of higher/lower value, B/W/neutrals)
- Consider how you will adjust the chroma. (complements, near-complements, neutrals)
- How far "apart" are source colors? likely to shift?

## Counter-intuitive Color Mix factors

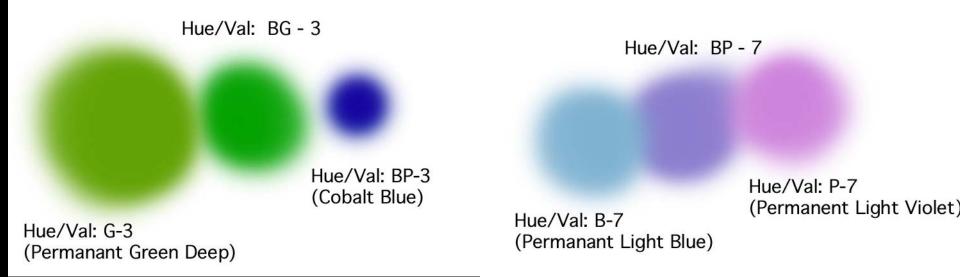
- Note hue shift with mixtures (blacks tend to blue-green; white has some hint of blue; browns are red, org, yellow)
- Note value drop with mixtures (see p. 76)
- Note chroma loss with mixtures (the more distant the source hues, the lower the chroma of the mixed color, the more pigments means less chroma)
- Note weber-fechner law increasing proportions for consistent change in effect. (p. 78)
- In general, add dark colors to lighter colors.

#### Mediums vs. Additives

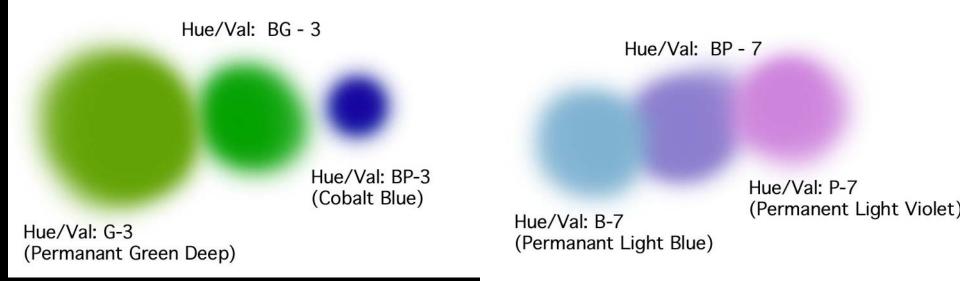
- Both alter properties of paint (thinner...thicker...slow down drying...speed up drying...enhance gloss surface...provide matt surface.)
- However, mediums do not diminish the reliability of the paint — mediums are either the same as or similar to the binder of the paint—the glue that holds the paint together. Thus, you can add as much medium to your paint as you like, and the paint will still work. It will still stick to surfaces well, it will not crack, etc.
- But, if you add too much of an "additive" to a paint, it will weaken the essential characteristics of the paint. Water, for instance, may be added to acrylic paint, but if you add too much, the paint becomes too weak to bond...it either gets a bit powdery or it peels away from the ground.

#### Gloss Medium

- We use gloss medium
- To mix transparent glazes
- To seal or protect
- To glue surfaces together (collage).
- To transfer newspaper, magazine or laserprinted images.
- NOTE: if you bring a small sealable container, you can have some gloss medium for class use. (baby food jar, 35mm film canister...)



- Mix colors.
- Paint samples of target color as well as source colors.
- Show source colors in approximate proportions to amount used.
- Label hue and value using column/row from liquitex color map.



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- Paint samples of target color as well as source colors.
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Hue/Val: BP - 7

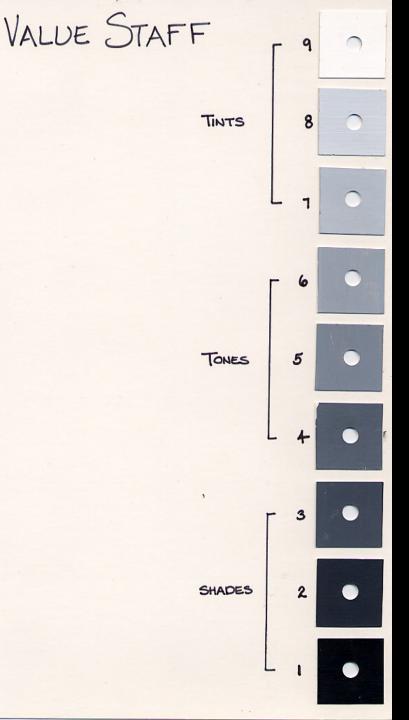
Hue/Val: P-7

(Permanent Light Violet)

Hue/Val: B-7 (Permanant Light Blue)

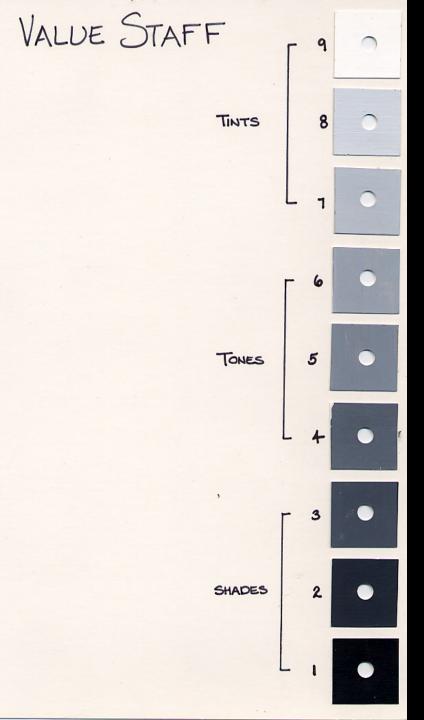
Hue/Val: BG - 3

Hue/Val: BP-3



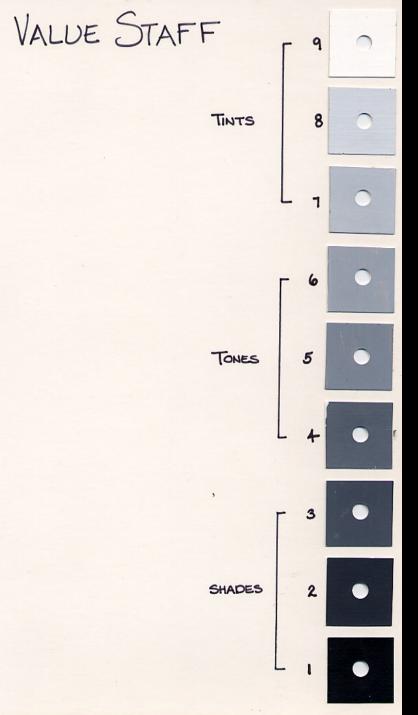
## Value Scale Chart

- Goals: mix accurate range of values in even steps.
- Learn to recognize and assess fine distinctions in value
- Main challenge: even/consistent steps throughout the scale.



## Value Scale Chart

- Use 1" squares, evenly spaced.
- Mount at Rt. edge of page.
- Hole-punch all the way through for viewing.
- Label values.



## Value Scale Chart

- Recommended sequence: 1 (black), 9 (white), (midvalue)
- 7 (Mid-high)
- 8, 6
- 3 (mid low)
- 4, 2
- NOTE: you will mix a total of 4 value scales for this and later assignments.

### Value Staff details

- Use pre-cut squares
- Paint squares before mounting.
- Position squares evenly and aligned.
- Hole-punch squares so value staff is easier to use when studying values later.



## "Strait Line Mixing" technique.

- Identify "target" color. This is the color you want to mix.
- Assess the hue, value, and chroma of the target color.
- Assess the "source" colors you have available.
   These are the colors that you can mix with the tubs/jars of color you own.
- Identify the colors nearest your target color.
- Find the source color nearest your target color.

# Strait Line, "Y", & Adjustments

- Try the strait line method to find what colors are on the either "side" of the target color.
- If you have two colors that make a strait line through the target color, you can begin to mix.
- You may have to do a "Y" mix using three colors, rather than two.

#### Constant Hue Charts

