

Color Matching Techniques

Cincinnati Woodworking Club

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Why Color Matching?

- Match existing piece(s)
- Blend sapwood, heartwood, plywood
- Repairs
- Because SWMBO says so

First, Understand the Stains

- **Dyes**

- Dissolved in solvent (sugar)
- Color intensity by concentration

First Understand the Stains

- **Pigments**

- Suspended in carrier (sand)
- Intensity controlled by application

First Understand the Stains

- **Chemicals** - reaction
 - Generally acid or alkali -- nitric acid, vinegar & iron, ammonia, lye, potassium permanganate
 - Intensity controlled by concentration and wood chemistry
 - High toxicity
 - Ready, fire, aim – not always best for matching

Dye vs. Pigment

	Dye	Pigment
Spotting	Less likely	More likely
Colorfast	Less	More
Control	Control by concentration Mixer defines, try different concentrations, keep notes	Control by wiping & number of applications Manufacturer defines
Contrast	Less contrast in pores Highlights figured woods (curl, fleck, etc.)	More contrast in pores and bad sanding
How it colors	In the wood	On the wood
Transparency	Transparent, even in darker colors	Can obscure the wood if heavy application
Solvency	No binder, re-dissolved in solvent, even if in finish.	Binder can stay gummy (not wiped off) or not be compatible with finish.

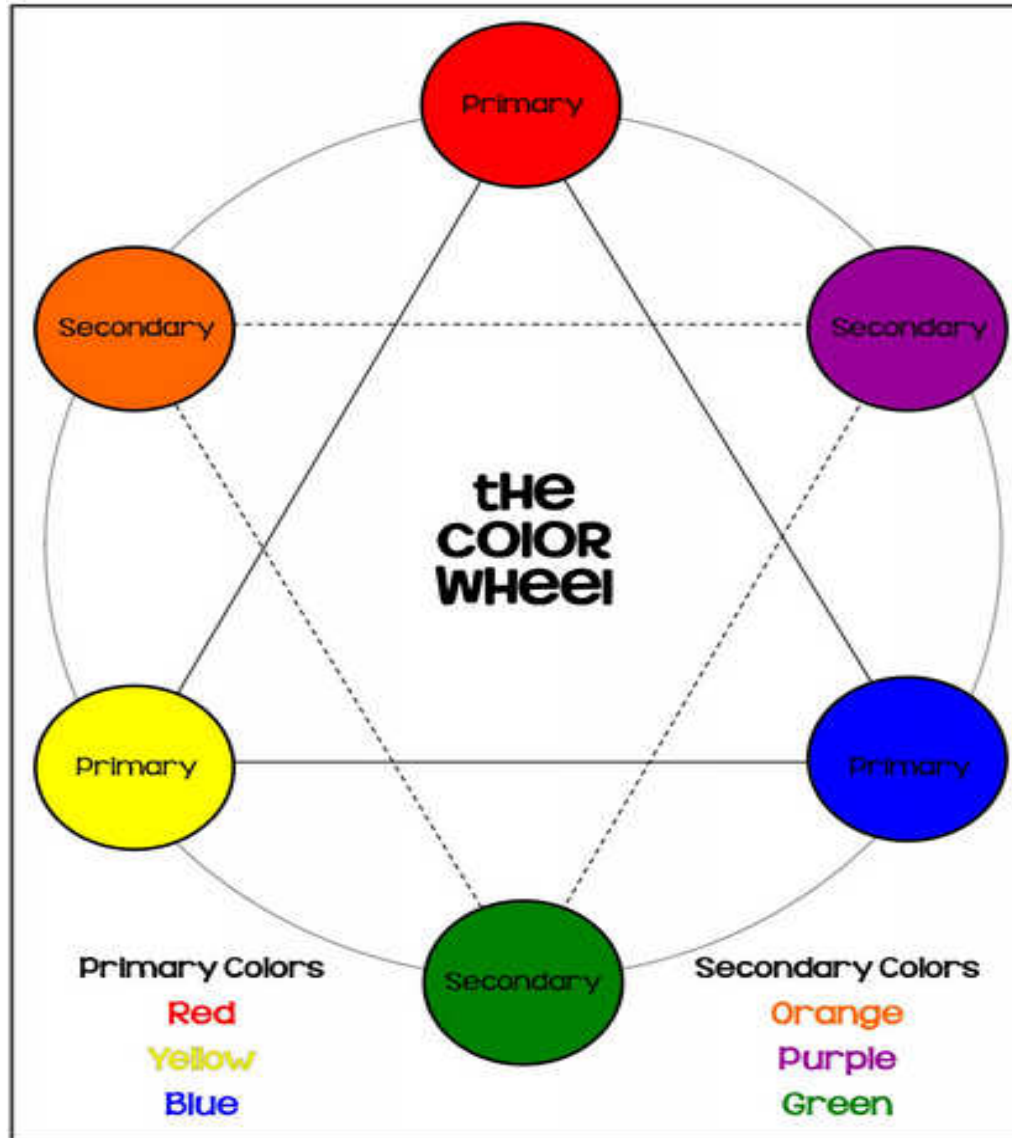
Color Matching

- When it comes to color matching, there is simply no substitute for practice.

And the practice will go more smoothly if you make some stain boards and understand some basic color theory to point you in the right direction

– Jeff Jewitt, *Taunton's Complete Illustrated Guide to Wood Finishing*

Color Theory



Step or Stain Boards



Beware the Light

- Fluorescent 5000K
- North light
- Nearby surfaces
- Ideally, match/check in final location

Adjusting Color In-Flight

- Blending
- Layering
- It's never too late to add color.
- Finish adds color

- Coloring is like onions

Products beyond “stain”

- **Toners (AKA Shaders)**
 - Finish with added color (dye or pigment)
 - Applied as a coat of finish
- **Glazes**
 - Heavy-bodied stain with few binders
 - Applied between coats of finish
- Can use either as only coloring agent (blotch)

Toner

- Must get **very light coat** or tends to opaque, streaks, runs, etc. Spraying best. Polyshades!
- Overall or in areas to highlight
- Some factories use toners as only color
 - Chip the finish; lose the color

Aerosol Toners

- Tend to have “wood” names



Roll-Your-Own Toner

- Add dye (e.g., Transtint) to your finish
 - Shellac, lacquer, water-borne



- GF Dye stains + Finishes



Applying Toners

- Spray multiple **light** coats
- Control by concentration and application
- Go from not enough to too much quickly

Shading with Toner

- Selectively spray around edges, raised panels, other features



Glaze

- Between coats of finish
- Can use to adjust colors via manipulation
- Control by how much you leave on

Glaze Products

- Heavy-bodied stain
 - Pre-canned
 - Glaze medium + UTC or pigment or Artist Colors
 - Gel Stains
- Base finish + glaze + top finish
- Manipulation, slow drying

Glazing technique

- Base coat(s) – sealer coat or finish, sanded
- Rag, brush or spray
- Wipe or brush around
- Can remove by wiping with thinner
- Let dry thoroughly
- Apply top coat(s)

Finish distressing with Glaze

- Fly specs
- Cow tails



Special Effects with Glaze

- Faux graining
- Graining over paint



Winter White Glaze
over Antique White
Milk Paint



Yellow Ochre Glaze
over Antique White
Milk Paint



Red Sienna Glaze
over Antique White
Milk Paint



Burnt Umber Glaze
over Antique White
Milk Paint



Van Dyke Brown
Glaze over Antique
White Milk Paint



Pitch Black Glaze
over Antique White
Milk Paint

Finish Changes with Glaze

- Add aging to finish, “Dirty up Finish”
- Adjust colors – add or neutralize

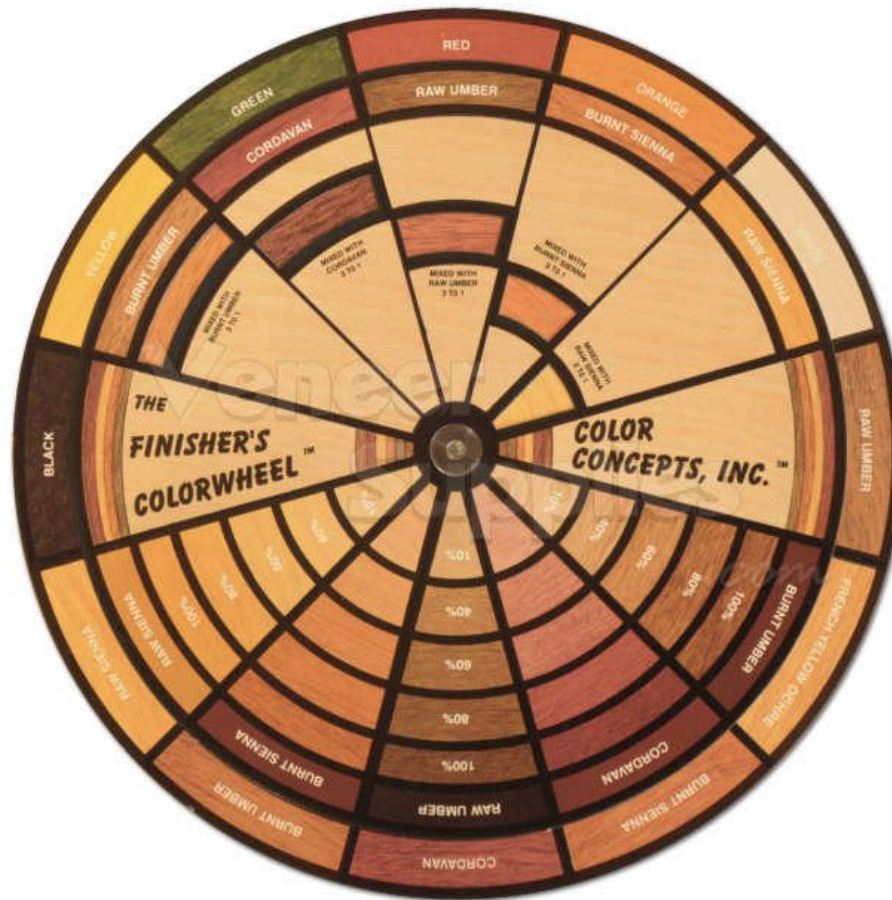


Glaze Common Colors

- Earth tones (Umbers, Siennas, Ochre)
- VanDyke Brown
- Black, White



Finisher's Color Wheel



Glazing vs Toning (Jewitt)

Objective	Technique	Comments
Increase richness or depth	Glazing or toning	Glazing best
Accent grain and distress marks	Glazing	
Faux graining	Glazing	
Imitate aging	Glazing	
Blend dissimilar characteristics	Glazing or toning	
Alter hue or color	Glazing or toning	Toning for extreme changes
Hide mistakes	Toning	
Control splotching	Glazing or Toning	Toning most uniform
Selective shading	Toning	

Getting Darker Color (Flexner)

- Sand to coarser grit
- Increase pigment : vehicle ratio
 - Add pigment
 - Leave on longer
 - 2nd coat
 - Glaze or gel stain
- Dirty Wipe
- Wet wood (raise grain) first
- Use dye instead of pigment (^ concentration)
- Use a toner
- Apply a glaze

If all else fails

- P⁷ = Proper Prior Planning Prevents Piss Poor Performance
- You can strip the finish and start over

Don't do this

- Code:
“I don't use stains because I like to see the natural wood.”

- Decode:
“I messed up stains so many times I quit.”

Keith's Six Rules of Coloring and Finishing wood

- 1. When you pick any finish, you select an attribute or two you want and you get all the other attributes that come along with that choice. There is no finish that's perfect for every need.**
- 2. Don't let anyone describe a color to you using words alone.**
- 3. When you are using a new product or technique always do trials / samples**
- 4. Wood coloring is like onions.**
- 5. Be wary of any advice from someone wearing an apron in the paint department**
- 6. Coloring wood is more like sailing a boat than shooting a rifle**