

MMAG Southern Branch recently had a live warp painting Saturday. Due to the excitement and encouragement from those attending I am sharing my personal instructions and color formula documents. Along with these are digital pictures of one of my color wheels taken by the Mimi and her husband. Many thanks to Mimi Rodes and Nancy Crowley for their help and encouragement in getting this accomplished.

I would like to encourage and share the tools needed for more fiber artists to learn how to do your own dyeing for warps and wefts especially in the weaving community. It is truly a powerful tool for fiber artists to be able to control the colors of the fibers they are using in their projects.

A numbered, twenty one color, small skeins wheel dyed with Procion® MX fiber reactive dye and it's formulas sheet is included plus instructions on how to figure out how much dye to use for your own projects. It was dyed using three primary MX colors :

Basic Red #310, Sun Yellow #108 and Mixing Blue #402c.

The formulas for the mixed colors are on the accompanying sheet. Please note that the Yellow is a 3% strength to the blue and red's 2% strength. The instruction sheet is also posted with the formula sheet.

For more information on other types of dyeing see the Pro Chemical and Dye web site: [Home page \(prochemicalanddye.net\)](http://prochemicalanddye.net) Click the download link for information sheets.

Have Fun!

Ivy DeHart

Directions for Warp Painting Fiber Reactive Dyes (cellulose)

by Ivy DeHart

1. Wind warp, tie loosely using figure eight ties to secure. Use a different size and fiber as ties to help in straightening warp out after dyeing and rinsing. Tie a heavier cotton yarn around Top and bottom of warp and in the crosses. This is used to keep warp from tangling in dye bath. I tie a stick in the two ends to help with handling.
2. Weigh the dry warp – this becomes your Weight of Goods (WOG), record it. Decide how light or dark you want your colors to be. This is your Depth of Shade (DOS), light or dark values.
3. Wet out yarn in hot, soapy (synthrapol or dish soap) water for 30-45 minutes.
4. Next you will need to make some Urea Water to use for mixing up your stock solutions. Urea is a dissolving agent and humectant. Not needed for vat dyeing.
5. Make the Urea Water by mixing together the ingredients below with hot water. Allow Urea Water to cool to room temperature before using:
9 level Tbl (1000 gm) Urea for each 1 quart (1 liter) hot water.
6. Dye Stock solution is: 1 gram dye powder to 100 ml of urea water. This is approximately (1 teaspoon dry powder to 100 ml water for a 1% stock solution). Mix your custom dyes using formulas given. See Note at Bottom of page.
7. Gently squeeze excess water out of warp – there is no need to rinse it.
8. Measure by weight the Pro Chemical Actuator needed by measuring out 15% of the Weight of your Warp.
9. Dissolve it (Pro Chemical activator) in very hot water at a (20/1 ratio).
10. Soak warp in it for at least 10 minutes.
11. Mix colors to be painted by using this formula:
$$\frac{\text{WOG} \times \text{DOS}}{\% \text{ stock solution}}$$
12. For example: $\frac{100 \text{ grams} \times 3\% \text{ DOS}}{2\% \text{ stock solution}} = 150 \text{ ml dye}$
13. Organize your applicators, dye containers and put on safety gloves and apron. On long table, sidewalk or floor covered in painter's plastic spread out warp to be painted.
14. After Painting, wrap up in plastic and put in as warm a place as possible to fix for minimum of 24 to 48 hours. Air temperature needs to be above 75%.
15. Remove yarn, (chain loosely) squeeze under hot soapy water to remove as much dye as possible. Do this several times changing the water until it runs clear.
16. Add small amount of vinegar to last hot water rinse. Add yarn and let soak for 3-4 minutes. This neutralizes the PH of the yarn. You can also add hair conditioner to help untangle.
17. Remove yarn from water and rinse in hot water one more time. For large amounts you may use a washing machine at this point with a capful of Synthrapol, but do not allow it to agitate, just cover with water and spin out. Spread warp out to dry. Stretch and pop to align the threads hold fast on the ends.

Stock Solution

A 1% stock solution works well for a medium value for most dyer's needs. The strength of the stock solution is the ratio of the dye powder to the volume of water, expressed in percentages. For example: 1 gram of dye powder dissolved in 100 mls of water is equal to a 1% stock solution strength:

1% stock	1 gram dye powder	100 mls of water	Light Values
2% stock	2 gram dye powder	100 mls of water	Medium Values
3% stock	3 gram dye powder	100 mls of water	Dark Values
5% stock	5 gram dye powder	100 mls of water	Black's

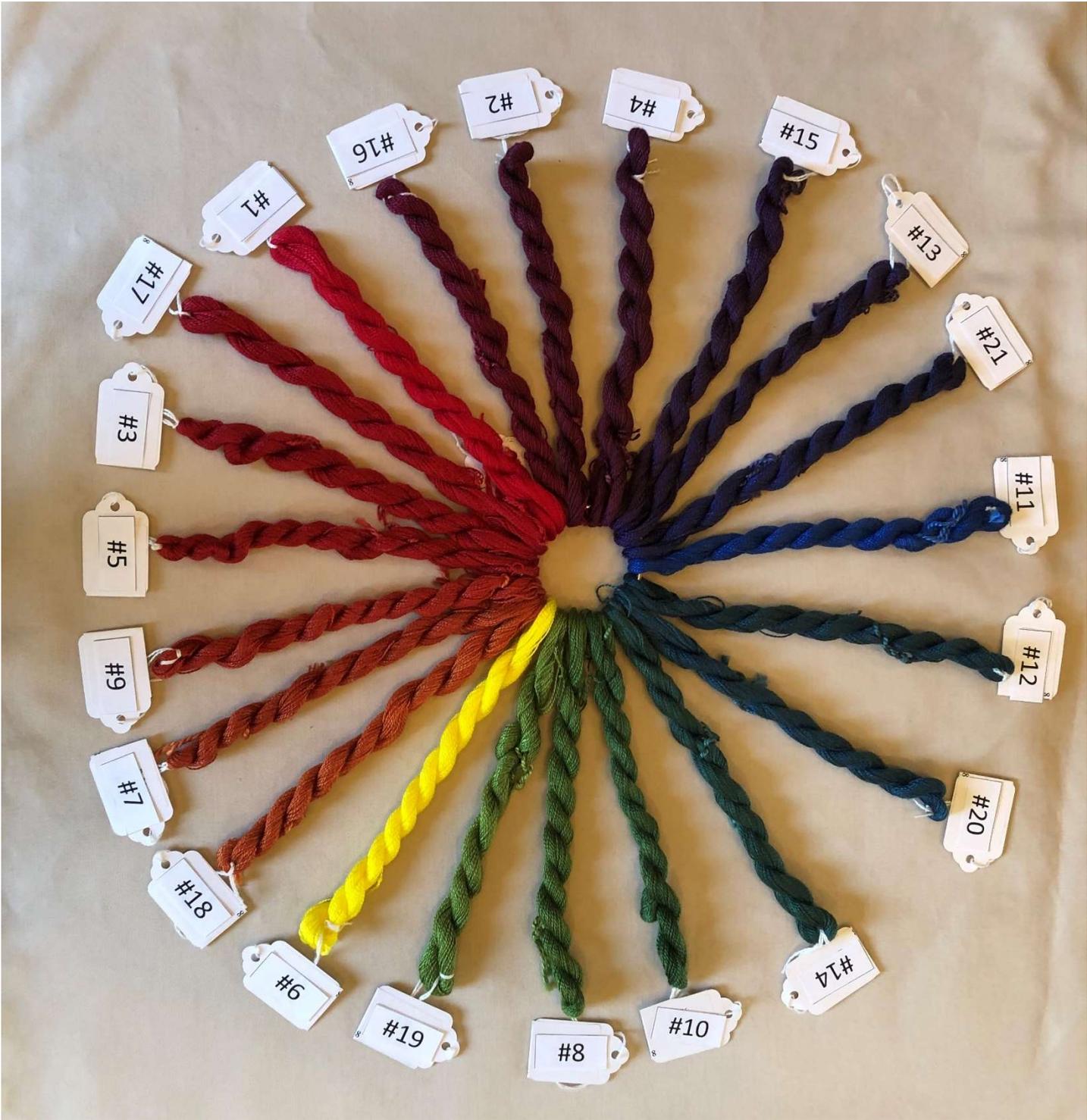
#310 Basic Red weight per teaspoon is 3.5 grams

#108 Sun Yellow weight per teaspoon is 3 grams

#400 Basic Blue weight per teaspoon is 4 grams

For more information and other types of dyeing see the Pro Chemical and Dye web site: [Home page \(prochemicalanddye.net\)](http://prochemicalanddye.net) Click the download link for information sheets.

21 step Color Skein Wheel



Red to Blue Segment:



Red to Yellow Segment:



Blue to Yellow Segment:



Procion ® MX - Fiber Reactive Dye									
Three Color Mixes -		Clear Color Steps October 06			Sheet D				
Weight of Fiber:	10 grams		Fiber - 10/2 Tencel						
Stock Solution: 2 %			Depth of Shade - 3% DOS						
Amount of Dye:	15		Soda Ash - 10% WOG - 1 gram						
Water: 20:1			Salt - 1 tsp						
	Basic Red #310		Sun Yellow #108		Basic Blue#400				
	<u>%</u>	<u>Amt of Dye</u>	<u>%</u>	<u>Amt of Dye</u>	<u>%</u>	<u>Amt of Dye</u>			
#1	90.00%	13.50	2.00%	0.30	8.00%	1.20	#1	100.00%	
#2	90.00%	13.50	8.00%	1.20	2.00%	0.30	#2	100.00%	
#3	82.00%	12.30	2.00%	0.30	16.00%	2.40	#3	100.00%	
#4	82.00%	12.30	16.00%	2.40	2.00%	0.30	#4	100.00%	
#5	76.00%	11.40	2.00%	0.30	22.00%	3.30	#5	100.00%	
#6	76.00%	11.40	22.00%	3.30	2.00%	0.30	#6	100.00%	
#7	70.00%	10.50	2.00%	0.30	28.00%	4.20	#7	100.00%	
#8	70.00%	10.50	28.00%	4.20	2.00%	0.30	#8	100.00%	
#9	64.00%	9.60	2.00%	0.30	34.00%	5.10	#9	100.00%	
#10	64.00%	9.60	34.00%	5.10	2.00%	0.30	#10	100.00%	
#11	58.00%	8.70	2.00%	0.30	40.00%	6.00	#11	100.00%	
#12	58.00%	8.70	40.00%	6.00	2.00%	0.30	#12	100.00%	
#13	8.00%	1.20	90.00%	13.50	2.00%	0.30	#13	100.00%	
#14	2.00%	0.30	90.00%	13.50	8.00%	1.20	#14	100.00%	
#15	16.00%	2.40	82.00%	12.30	2.00%	0.30	#15	100.00%	
#16	2.00%	0.30	82.00%	12.30	16.00%	2.40	#16	100.00%	
#17	22.00%	3.30	76.00%	11.40	2.00%	0.30	#17	100.00%	
#18	2.00%	0.30	76.00%	11.40	22.00%	3.30	#18	100.00%	
#19	28.00%	4.20	70.00%	10.50	2.00%	0.30	#19	100.00%	
#20	2.00%	0.30	70.00%	10.50	28.00%	4.20	#20	100.00%	
#21	34.00%	5.10	64.00%	9.60	2.00%	0.30	#21	100.00%	
#22	2.00%	0.30	64.00%	9.60	34.00%	5.10	#22	100.00%	
#23	40.00%	6.00	58.00%	8.70	2.00%	0.30	#23	100.00%	
#24	2.00%	0.30	58.00%	8.70	40.00%	6.00	#24	100.00%	
#25	2.00%	0.30	8.00%	1.20	90.00%	13.50	#25	100.00%	
#26	8.00%	1.20	2.00%	0.30	90.00%	13.50	#26	100.00%	
#27	2.00%	0.30	16.00%	2.40	82.00%	12.30	#27	100.00%	
#28	16.00%	2.40	2.00%	0.30	82.00%	12.30	#28	100.00%	
#29	2.00%	0.30	22.00%	3.30	76.00%	11.40	#29	100.00%	
#30	22.00%	3.30	2.00%	0.30	76.00%	11.40	#30	100.00%	
#31	2.00%	0.30	28.00%	4.20	70.00%	10.50	#31	100.00%	
#32	28.00%	4.20	2.00%	0.30	70.00%	10.50	#32	100.00%	
#33	2.00%	0.30	34.00%	5.10	64.00%	9.60	#33	100.00%	
#34	34.00%	5.10	2.00%	0.30	64.00%	9.60	#34	100.00%	
#35	2.00%	0.30	40.00%	6.00	58.00%	8.70	#35	100.00%	
#36	40.00%	6.00	2.00%	0.30	58.00%	8.70	#36	100.00%	