Carding for Color Part II: Fiber Is Not Paint

By Deb Gerish

If you print this PDF, print in color—photos won't be legible in black and white.

Once you understand the basics of color theory, you have a lot more control over fiber colors. In Part 1, we explored hue, value, and saturation using paint colors and dyed fiber braids. Now we can start blending fibers for our own color designs.

TOOLS & MATERIALS

- Schacht hand carders—I strongly recommend using hand carders because we're making very small batches of colors. I used Mini Curved Carders (72 psi).
- Fiber: half an ounce each of white, black, and at least one pair of complementary colors (blue and orange, red and green, or yellow and purple). I used red and green for my complementary pair.
- Other fiber colors if you have them. I had blue and yellow in my stash.

Before we start blending, let's discuss one more color theory term: optical mixing. It refers to the way human eyes and brains process colors that sit right next to each other. We visually blend the colors to create a new one. And it happens all the time—for instance, when we look at a page printed in full color. Printing equipment uses dots of four ink colors (cyan, magenta, yellow, and black) to create every color you can imagine.

When we card fiber colors they DO NOT mix like paint colors. In Part 1, when we looked at paint brochures, we did not see optical mixing. Paint is a liquid medium: when you combine different colors and mix them completely, you can't see the parent colors anymore.

Fiber colors DO mix like ink dots—sort of. Dot size will determine how uniform a color looks. The bigger the dots, the more easily we can see the parent colors. Printers use teeny dots, 300 or 600 per inch, so printed colors will look evenly mixed. In fiber blends, our dots can never get smaller than one strand of the fiber. Fiber strands are also long and skinny instead of round.

Clockwise from left: blue, green, yellow, red, black, and white fibers for blending

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EVENLY BLENDED COLORS

When we blend fiber colors, we can control the size of the dots—that's how the magic happens. Remember the first rule of optical mixing: The bigger the dots, the more easily we can see the parent colors. For a (relatively) uniform color, we have to break up the dots as much as possible. For a subtle heather, the contrast dots can be larger. For a faux tweed, the contrast dots can be really large. And now we're ready for the second rule, which relates specifically to blending fiber colors: The more passes you make with the carders, the smaller the dots will get.

Grab your carders and fiber colors. I used small amounts of undyed cream, black, red, green, blue, and yellow fiber.

TIPS FOR BLENDING EVEN COLORS:

- You're blending, not opening up the fibers for spinning. If the fibers are compacted, card or tease each color separately so they're fluffy.
- Blending on carders does not take much elbow grease when the fibers are already opened up. Use a very light touch. Pay attention to your arms and shoulders: keep them relaxed and hold them near your lap. Don't twist your body as you move the carders.
- We can eyeball the proportions of colors, instead of weighing them on a scale, because we're using such small amounts.
- For the first pass, lay out colors on one carder in horizontal or vertical stripes. (With layers of color, it's harder to see the proportions.) I prefer vertical stripes. Don't use too much fiber! Leave some empty space on the carder teeth so you can add more fiber if necessary.
- On the first pass, I move the carders out of alignment while I brush, to blend the colors more quickly. Reposition the layer of fibers between each pass. Turn over the layer, or tear it into narrow strips, and then put them back on a carder. When you see a clump of unblended color, tease it out on the carder teeth before adding the rest of the fibers. Continue making passes until you've broken down all the dots of color.
- In an evenly blended rolag, you can always add more color to change the proportions!

Let's start with evenly blended colors featuring small dots, then work up to heathers and faux tweeds.

EXERCISE 1: Combine white (or cream) and black fiber into gray rolags. Play with the proportions of each color to make different values of gray.

I began with a 50/50 combination of white and black. Then I used more white for the lighter grays and more black for the darker ones. My 5 rolags form a value sequence.

EXERCISE 2: Combine a color with white and black for a value sequence. Use the color alone for the middle value. Add white for the lighter value(s) and black for the darker.

I used red for the color, adding a small amount of black and a larger amount of white. Black takes over very quickly in blends. Notice that white and black toned down the bright red.

Left: Two colors in vertical stripes for a 50/50 blend.
Right: Three colors in horizontal stripes. Each stripe takes up about 1/3 of the carding cloth.

White and black fibers blended into a value sequence of blended grays.

Red blended with white, red, and red blended with black for a value sequence.

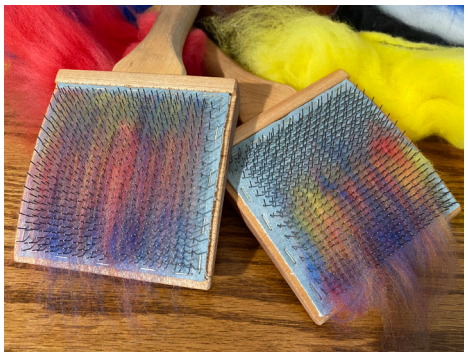
EXERCISE 3: Combine two complementary colors into a neutral. You'll need blue and orange, purple and yellow, or green and red. Again, start with 50/50 proportions and then play around. Here we're changing hue and saturation. When they're combined, the hues optically mix into a neutral and the saturation will be toned down.

I used a very bright green and a very bright red. One rolag has more green in it; the other has more red. I could make more rolags with different proportions of the parent colors for a hue sequence, shading from pure green to pure red. Curiously, both rolags became muted. Yes, two high-saturation colors can cancel each other out—the farther apart they live on the color wheel, the more likely they will mute each other. Since complementary colors live on opposite sides of the color wheel, they'll mute saturation the most.

Can we blend a saturation sequence? Try it and see what happens!

EXERCISE 4: Blend 3 colors, choosing 2 from the same color family—add white and black to one of your base colors (red, green, etc.)—or using 3 different color families.

Complements create neutral colors. One rolag had a larger amount of red fiber; the other had more green fiber.



The primary colors red, blue, and yellow make a very interesting neutral. Is it brown or gray or something else entirely? Sometimes it seems purple. Note that it's a different neutral from the red and green one.

I combined roughly equal amounts of black, red, and green into . . . something. A very reddish gray?

Finally, I combined equal parts of blue, green, and white, just to see what would happen.

UNEVENLY BLENDED COLORS

We can apply the same techniques for heathered colors and faux tweeds on hand carders. Here the blending and proportions of color will be unequal by design. We'll start with a base color, then we'll add dots of contrast color(s).

- True heathered yarns have always been made of blended colors; neither unspun fiber nor a spun yarn can be dyed as a heather. The unspun heathered fiber has streaks and small blobs of contrast colors.
- True tweed yarns have a base color with nepps, noils, or cut-up bits of yarn carded in. We'll use largish dots of contrast colors.

When you spin either of these blends, it's important to leave the dots intact. In other words, you won't produce a perfectly even yarn and shouldn't try.

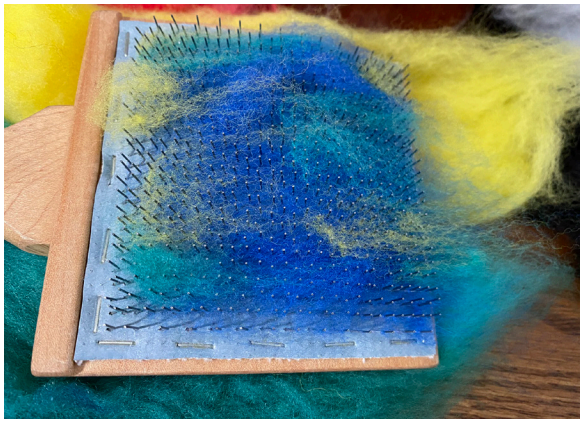
I created 2 variations of a colorway I called Starry Night, using about 80% blue, 10% yellow, and 10% green for each one. For the heathered version, I set up the carder with a solid blue layer. Then I overlaid some yellow in clumps. In a single pass, the yellow formed streaks. Then I added clumps of green and made one more pass. Two passes were enough for this rolag.

With the tweedy blend, again I began with a layer of blue. Then I overlaid clumps of the contrast colors, made one pass, and took the rolag off the carder.

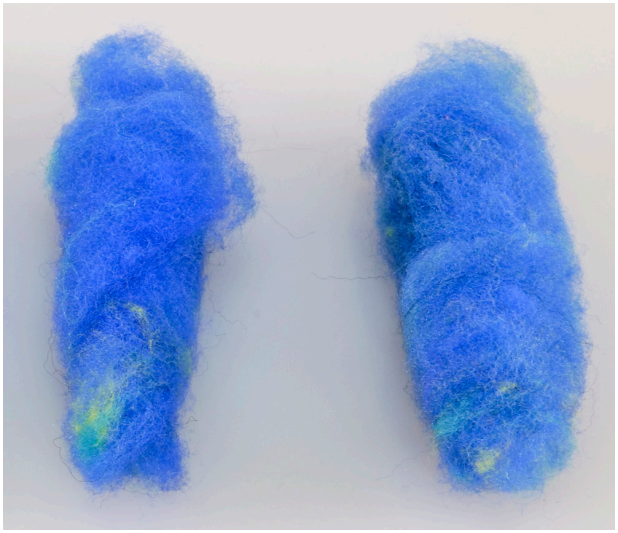
SPINNING BLENDED COLORS

Blended fiber colors will produce glorious handspun yarns. When you create and spin your blended rolags, consider these guidelines:

- Any time you use hand carders, you're making a woolen prep. Even if you start with a worsted prep, say dyed top, carding will mess up the perfect alignment of the fibers. Adjust your expectations for the finished yarn: it will be harder to produce an even yarn with no lumpy spots. Choose a drafting method that you'll enjoy. With these rolags, I started with worsted drafts (i.e., no twist between my hands) but didn't like the spinning or the yarn it produced. Woolen drafting, specifically long draw with twist between my hands, made better yarn and I stopped fussing over every little lump.
- If you're planning a large project, blend and spin a sample rolag, then adjust the colors as needed. When you're happy with the sample color, blend all the rolags before you start spinning.
- Drafting will affect the final color of your yarn slightly, no matter how you draft. You're attenuating the rolag—pulling out strands of fiber from a larger clump—so you'll break up color streaks and dots as you draft. Remember to keep the dots intact when you want to make tweed-effect yarns.
- Plying choices can affect the final color. If you like the color, use the yarn as singles or ply singles made from the same type of rolags. If you want a different effect, try plying the blended color with a solid-color ply. Plying the blend with a neutral can cause the blended colors to pop.



Layering colors for Starry Night Tweed.



Starry Night Tweed (left) and Heather.

Plying the blend with a color in the blend will emphasize that color: for instance, if I plied my Starry Night heather with a very fine solid yellow singles or with yellow thread, the yellow in the heathered ply would pop more.

- You may want to slightly felt the yarn in the finishing process, particularly if you use a woolen drafting method for this woolen prep. Let the skein soak in hot water for 20 minutes with some wool wash or dish soap. Then prepare a bowl of ice water and get out some rubber gloves. Remove the yarn from the hot water and plunge it into the cold to shock it. You can let it sit for a minute, or you can agitate it in the cold bowl. Go back and forth between hot and cold a few times, soaking or agitating as you prefer. Agitation will produce a harder, more felted finish.

We've met a lot of dots in this part of the series. Remember that they're your friends, but they're also in your power.

RESOURCES

What Is Optical Color Mixing?

Optical Color Mixing

See how Brooklyn Tweed's heathered yarns are spun, woolen style.