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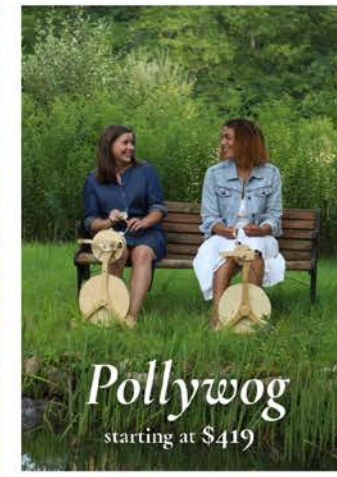

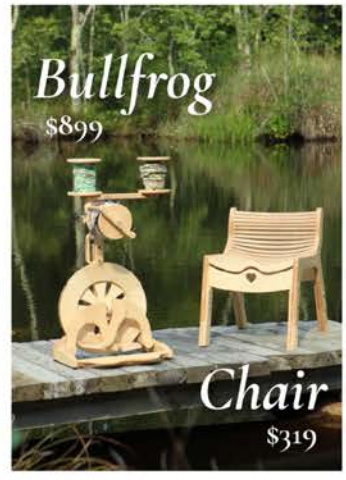

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Photo by Suzy Brown

Photos by Matt Graves unless otherwise noted

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On the cover: Marigold and cochineal dyes. Alum-mordanted fiber and handspun wool. Photo by Matt Graves

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"What's your favorite color?" is such a simple, almost trite question, but it's big. Color is personal, cultural, psychological, discussed in the framework of rules, but ultimately informed by our own perceptions.

And like all else, we experience color in the context of its environment. You might answer red because wearing it makes you feel confident. You might answer blue because it brings the sounds of the surf to your ears. I'm obsessed with a specific, nearly neon green that is the color of mossy veins running through old, gray stone walks. So, it's not just color, but color in context. For handspinners, this context also includes texture, color mixing during drafting and plying, and what we plan to do with our colorful skeins.

In this issue, **Jillian Moreno, Suzy Brown**, and **Emonieiesha Hopkins** show you very different methods for combining and manipulating color in spinning. Marls, hackles, and blending boards await! Creating palettes and colorways that reflect *your* aesthetic don't always require a dyepot.

Are you ready to dip a toe into dyeing? **Sukrita Mahon** shows you how to start creating handpainted fibers with accessible grocery-store dyes, and **Martha Owen**'s one-stop rainbow dyepot yields a variegation of naturally dyed colors in a hurry. If you're looking to explore color theory and finely tuned palettes, **Terry Mattison** introduces a simple approach to creating and identifying complex colors with scientific precision. There's always more to learn about color and fiber!

What's my lifelong favorite color? Yellow—the color of sunlight, caution and awareness, bright dawns, and aged pages. May the spring offer you the colors you need in abundance.

Wishing you peace and perfectly filled bobbins,

Wrap up in squishy ombré happiness! Knit a Salt Spring Cowl on page 38.

Photo by Matt Graves

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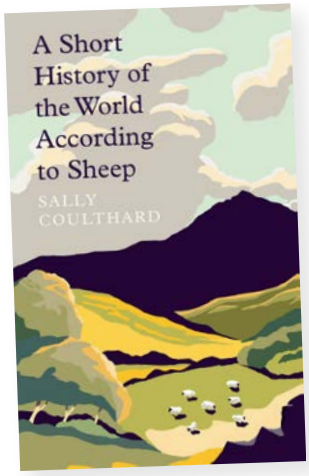
The Eye of Fiber

An Uncommon Story from Around the World

Linda N. Cortright

If you're a fiber lover suffering from an intense case of wanderlust, *The Eye of Fiber* will soothe your need to roam. Embark on a journey exploring the fiber traditions of nine countries with Linda Cortright of *Wild Fibers* magazine. With flashes of wit and humor, Cortright shares the stories she's gathered about her experiences with the people and places encountered on her travels, infusing each with a pinch of cultural background, history, and economics. But it's the book's photographs, both intimate and expansive, that truly tell the stories. Travel along from the remote windswept landscapes of the Gobi Desert to the homes of shepherds living at altitude in the Andes. Cortright offers us a glimpse of the fiber producers—their lives, and even their dogs—who bring us the fibers drafted between our hands.

Union, Maine: Grumble Goat Press, 2020. Paperback, 112 pages, $27.95. ISBN 9780578782362. Wildfibersmagazine.com.



A Short History of the World According to Sheep

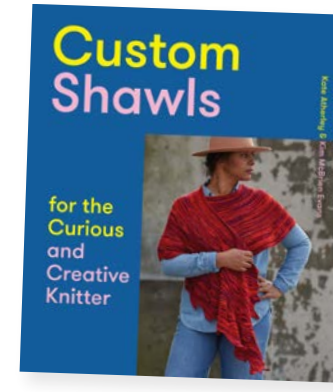
Sally Coulthard

Breed studies are all the rage thanks to initiatives such as Shave 'Em to Save 'Em that promote awareness about endangered breeds of sheep. But while you're spinning fiber from new-to-you breeds from near and far, why not expand your knowledge of world history from the ovine point of view? Author Sally Coulthard stitches together fascinating tidbits, exploring the sheep's relationship to human civilization and culture. Learn how woolen felt protected the Romans in battle. Discover the origins of several common sheepy sayings. Each chapter begins with a charming sheep-themed linocut by printmaker Sarah Price, and the book closes with an index for easy reference and suggestions for further reading.

London, England: Head of Zeus, 2020. Hardcover, 320 pages, £16.99. ISBN 9781789544206.

Custom Shawls

for the Curious and Creative Knitter



Kate Atherley and Kim McBrien Evans

Although Kate Atherley and Kim McBrien Evans didn't set out to write this book exclusively with the handspinner in mind, their approach to design and using up every precious yard of yarn will immediately grab a spinner's attention. *Custom Shawls* contains 13 projects, but don't settle for adapting your one-of-a-kind handspun to a pattern written for commercial yarn. The book's strength lies in teaching readers to design their own shawls. Begin by selecting a shape in chapter one, which includes a discussion about the pros and cons of the most common options. Next, add some color and a stitch pattern; you'll find clear explanations of techniques, including color-theory basics and how to shape stitch patterns, supported by handknitted examples. The authors provide the tools and a creative nudge for designing and knitting shawls you'll want to wear.

New York: Abrams, 2020. Paperback, 192 pages, $27.50. ISBN 9781419743979.

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Sister Proprietors: Provisions Kenya

BY NANCY KINYANJUI

From left: Nancy and Susie Kinyanjui share their passion for craft and locally made materials through their store, Provisions Kenya.

My sister Susie and I both began knitting at very early ages. We were taught by our mum and our nanny and were continually inspired by our grandmother. Growing up as young crafters in Kenya, it was common to find locally spun wool. When my sister and I returned home after spending several incredibly inspiring years in New Mexico, we saw a flood of imported and synthetic yarns saturating the Kenyan market. Through Provisions Kenya, we are determined to share the importance of sourcing local fibers for crafting.

Our mission is to find area craftspeople who share our passion for the natural fiber arts, as well as those determined to reinvigorate this important trade. We believe that handmade goods add a much-needed spark of joy and value to life. All of our wool yarn is sheared, processed, and spun in Kenya. We are passionate about wool and have extended our line to include handmade wool comforters, sheepskin slippers, and rugs. We also have a line of hand-carved knitting needles and crochet hooks made from sustainable jacaranda tree wood.

Provisions Kenya sources the fiber and spins and dyes its flagship Rift Valley Yarn locally.

Photos courtesy of Nancy Kinyanjui

Our Rift Valley Yarn is the flagship product for Provisions Kenya, and we spent months researching and connecting with farmers and spinners to create this unique yarn. Our wool is seasonally sheared from sheep raised in the Rift Valley as well as on private farms in the foothills of Mount Kenya. Brought by the bale to Nairobi, the wool is handcarded, spun, and dyed by an admirable cooperative of women. We're proud to bring this product to our customers.

Our future plans include adding unique notions, such as locally made stitch markers, natural moth repellent made with pure essential oils, and yarn-storage bags. Once plans are complete on our fiber-arts center, we want to offer customers the option to buy roving, raw wool, spindles, and looms. We have also been encouraging our spinners to forage for plants that are effective natural dyes, and we have been meeting with a silkworm farmer and cotton growers with plans to incorporate those fibers into our yarn selection.

We enjoy embroidery, so we've worked with a local artist to develop a custom embroidery kit, featuring

a beautiful pattern of the national bird of Kenya. We plan on expanding this line of kits to include other flora and fauna found in the region.

We have been lucky to connect with farmers and artisans who convey that the orders we make for wool and yarn have directly impacted their small businesses. With our partnership, they have been able to hire additional team members, improve on equipment and systems, and most importantly, have a stream of incoming revenue during the difficult and uncertain times of this COVID-19 pandemic.

One exciting new partnership for us is with a local community that encourages sustainable sheep farming to preserve wild pasture that is a habitat for birdlife. Rather than converting the pasture to farmland, farmers are encouraged to leave it wild for sheep to graze, and rare birds are able to nest and cohabit the land in turn.

Another new project on the horizon is working with local women who have recently been released from prison. Often, they are unjustly accused, imprisoned without a chance for a fair trial. Once released, they face insurmountable stigmas for having served time. We are in the process of creating a fiber-arts training center to employ women and men from all walks of life, offering a safe and healthy place of work.

In addition, we have created a curated Wool Safari, offering a hands-on glimpse of key fiber-art trails around the country. Safari guests are offered a chance to visit with shepherds and their sheep, tour scenic pastures, and spend time with spinners and weavers to offer insight into the skill and talent used in making wool products.

For more information about Provisions Kenya, visit **provisions.co.ke**.

Susie Kinyanjui meets with a local shepherd and his Merinos.

Tips for Navigating Online Fleece Sales

BY ELIZABETH PROSE

Photo by Robin Nistock

A ruler gives buyers a better idea about staple length. The lock shown is from Snoopy, one of Robin Nistock's Cotswolds.

Over the past year, the COVID-19 pandemic forced many fiber festivals to cancel or quickly pivot and move their events online. For those of us who love the scent of freshly shorn fleece and friendly chats with shepherds, online gatherings have made buying and selling fleeces more challenging. We asked three members of our fiber community to share their tips for approaching online fleece sales: Robin Nistock, owner and shepherd at Nistock Farms in Prattsburgh, New York; Lynda Davies, shepherdess and owner of Foggy Hollow Ranch in Hungerford, Texas, and Fine Fleece Shetland Sheep Association (FFSSA) treasurer and webmistress; and Sue Barraza of Monterey County Fair Wool Show and Auction in California.

Tips for Sellers

Whether sellers offer their fleeces for sale on a personal website, through social media platforms, or during an online event, there are a few key things they can do to help market their fiber. Sue emphasized that "a good shearer is key," and fleeces should be free of second cuts. Robin stressed that shepherds should know their fleeces "inside and out" and be honest about a fleece's faults, noting that even fleeces with imperfections will sell if priced accordingly. They should also wash a few locks to show how the fiber will clean up.

Clear, in-focus photos of the whole fleece and a lock next to a ruler help give buyers a sense of what is being offered. Adding personalized information, such as the name of the sheep and a short story, can help connect the fleece with the right buyer. Lynda said sellers should state what makes their fleece unique. Note if the flock is jacketed; if the fiber was sheared or rooed, washed or raw; how much vegetable matter is present; and if the fleece was heavily skirted. Also, be clear about a fleece's weight, shipping cost, and what forms of payment you'll accept.

Photo by Lynda Davies

Ivory, one of Lynda Davies's Shetland sheep, showing off her fleece. Offering information about the sheep, such as a name and a story, forges a connection between the buyer and the fleece.

Tips for Buyers

Do your homework. Sue explains that buyers should have an idea about how they want to use the fleece and what breeds produce the best fiber for that end use. Attending a virtual fleece judging can be worth the time and highly educational, too. Don't be timid—ask questions. Most shepherds are happy to help educate buyers about their flocks. Lynda says that buyers should have a list ready and ask before a sale starts.

Things can move fast during a sale, and Robin says buyers should be aware of what forms of payment are accepted, preferred shipping methods, and the terms of the sale before it begins. And use technology such as autofill and online payment services to your advantage. A little knowledge can make the difference between having the winning bid in an online auction or missing out on a gem of a fleece.

To read more tips from Robin, Lynda, and Sue, visit **spinoffmagazine.com**.

Resources

Fine Fleece Shetland Sheep Association, finefleeceshetlandsheep.org
Foggy Hollow Ranch, foggyhollowranch.com
Monterey County Fair, montereycountyfair.com
Nistock Farms, nistockfarms.com

Epic Jacket

BY BARBARA DAIKER

Pattern and designer Get Weaving jacket pattern JA017 by Sarah Howard.
Fiber/preparation The fiber was dyed by three dyers: Greenwood Fiberworks, Targhee in a green color; Crafty Jak's Boutique, Targhee in a yellow color; and Three Waters Farm, Finnsheep in a purple color. I used 20 ounces of Targhee and 8 ounces of Finnsheep. The yellow yarn turned out to be too bright when I wove a sample with the other yarns, so I used some Gaywool brown dye that I had on hand to tone down the color. It worked perfectly!
Wheel system SpinOlution Echo.
Drafting method Short-forward draw.
Singles direction S-spun.
Singles wraps per inch 24 wpi.
Ply wraps per inch 11 wpi.
Yarn Cabled, 4-ply; 1,000 ypp.
Total yardage 1,250 yards.
Yarn classification/weight Light worsted weight.
Yardage used 1,200 yards.
Loom 6-harness Loomcraft floor loom.
Sett 10 epi.
Finished size Fabric, 140" long and 18½" wide.

Barbara wearing her handspun, handwoven jacket.

Photos by Barbara Daiker

After knitting for a number of years, I was curious about yarn construction. I took a class at a local yarn shop and became a spinner in 2000. Making yarn satisfies my desire to create useful objects that are aesthetically pleasing. I also love natural products. Spinning hits both of these buttons. I took up weaving in 2012 when my mother gifted me her loom and accessories.

Each year, I pick a project that pushes my skills a little further. After taking a beyond-basics spinning class from the Weavers Guild of Minnesota, I felt confident that I could tackle more significant projects. In 2019, I spun, wove, and sewed the front panel for a dress. To take things further, the project goal I set for 2020 was to make an entire garment. I wanted something multicolored so I would not get too bored with spinning a single color, and I wanted to make sure that the yarn could handle the reed and tension of a floor loom. I looked at various yarn structures and decided that a cabled yarn would be the most reliable for strength with four plies to even out any inconsistencies. My goals were to make a garment that could hold up to wear in a weave that would be looser than commercial fabric and to construct a garment without a lot of waste. I settled on a jacket.

I had seen the pattern from Get Weaving and liked how it could be woven on a narrow loom to create a garment. It seemed like a good place to start. The

seams of a jacket are less stressed than those on pants or skirts, making the jacket a suitable project for the looser weave I had in mind.

I decided to use Targhee for its ease of spinning and lovely bouncy hand. As I scrolled through the websites of my favorite dyers, I found the Mallard colorway from Greenwood Fiberworks and added the other colors to complement. I started spinning the singles, made a two-ply yarn, and then plied again for a cabled yarn. It was like magic when the cabled yarns came out of a finishing bath. They were beautiful.

Before I could set up my loom, I needed to establish the warping plan. Using a Schacht Zoom Loom, I created a sample to get a feel for the sett and color order. It was apparent right away that the yellow was too bright. After considering my options, I decided to use some brown dye to tone down the brightness. With some help from the internet, I weighed and dyed the yarn, and it turned out perfect. I wove a new sample and decided that the sett would be about 10 ends per inch (epi) and that I would need to place the colors randomly. Using a random number generator, I created a color sequence and measured the warp.

The weaving process was swift. With a plain-weave structure and easily tucked-in ends, I quickly wove the random sequence of the colors. When the fabric came off the loom, I was delighted. After a hot wet-finish, I laid the fabric out to dry. But then I could not get myself to cut it. It had to sit for a couple of weeks until I could think of it as fabric and not hours of spinning, plying, and weaving.

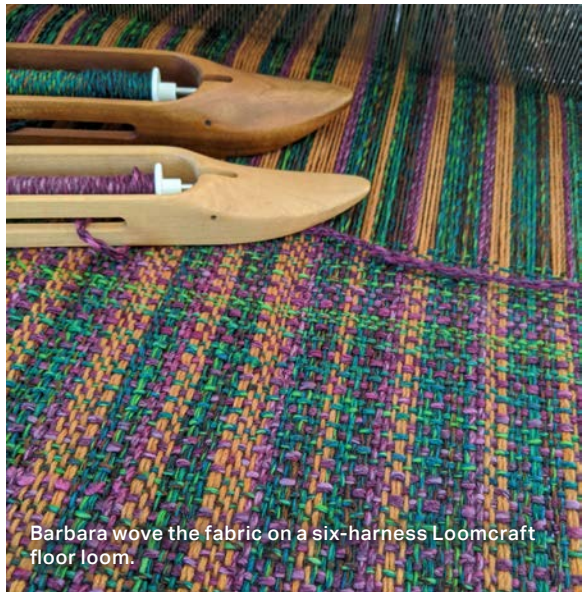
The jacket is warm, which works well in Minnesota winters. I love the colors, and they coordinate with many of my clothing options. I still have not added the buttonholes, although I sewed on the buttons. I am not confident the buttonholes will hold up without pulling the fabric apart. For now, the jacket is just fine without buttoning it up. This year, I'm planning to spin and weave a twill-structure wool skirt. And one of the talented hand-dyers will inspire me—I am sure of it!

Resources

Crafty Jak's Boutique, craftyjaks.ca
Gaywool Dyes, gaywool.com
Get Weaving, getweaving.etsy.com
Greenwood Fiberworks, greenwoodfiberworks.com
Three Waters Farm, threewatersfarm.com

Follow Barbara Daiker on Instagram @bldaiker or visit her website, sheepshifter.com.

Have a finished object to share? Tell us about it! Contact **spinoff@longthreadmedia.com** to submit your project.



Barbara wove the fabric on a six-harness Loomcraft floor loom.

Barbara's handspun cabled yarn before weaving. She overdyed the yellow yarn with brown to tone down the color.

Use a blending board or drumcarder to add depth to the colors in a hand-dyed braid of fiber.

Photos by Emonieiesha Hopkins

How to Deconstruct a Braid

BY EMONIEIESHA HOPKINS

Take control of your fiber's colors!

Deconstructing braids gives handspinners the option to make certain colors more dominant, change the order of the hues, make new shades, or even tone down certain colors.

Hand-dyed braids dominate my stash, but it can be hard to tell the color layout when the fiber is braided. However, I don't always have to spin a braid as it was dyed. To change the colors, I deconstruct my braids, reorganize the colors, and change the preparation. This allows me to control the color and put the color where I want it. I don't always have the finished yarn in mind, but I enjoy sitting at my wheel and taking sneak peeks at a beautiful bobbin of which I am in total control.

MAKE A PLAN

Start by unbraiding the fiber and lay it out lengthwise. In most cases, once the braid is laid out, I am able to tell how the braid was dyed and the full length of the colors. Notice how the colors are arranged and develop a plan for color management and preparation. Next, I use my color wheel to help me decide on possible color blends. The goal of controlling my own color is to be sure that my deconstruction does not create the dreaded mud.

Begin by separating your colors into matching color stacks. In the braid shown, I have yellow, blue, and purple. Basic color theory tells us yellow and purple are complementary, or opposites, on the color wheel.

This lets us know that if we blend these colors in equal amounts, we create a muddy shade. The color wheel also shows us that yellow and blue make green.

CHANGE THE PREP

Armed with a bit of color knowledge, I decide on a new preparation.

Method 1: Blending Board

To combat having flat, solid-colored singles, I use my blending board to aid in creating color depth. When breaking down a braid by hand, the color on the tip ends will most likely be a different color from the main one in the stack. Don't worry about that. The tips of a different color add dimension to your rolags.

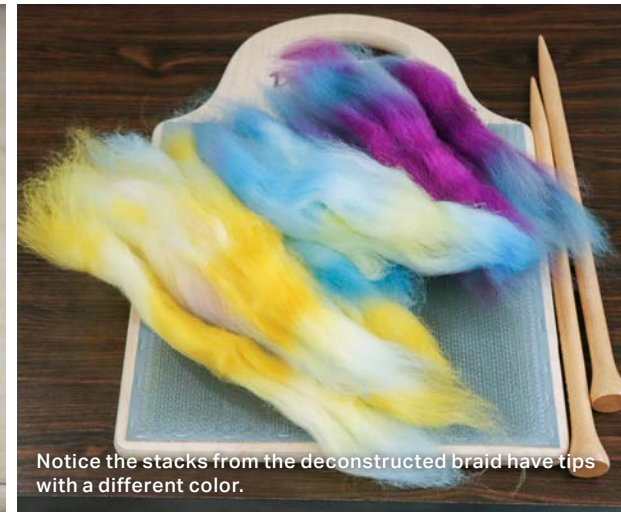
Method 2: Drumcarder

Another great tool to use when deconstructing braids is a drumcarder. First, I deconstructed the braid by color stacks. Next, I blended each color side by side on the drumcarder. Notice in the photo below how the yellow and blue fibers, center and right, make green, which is a color that was not in the original braid. Also, the carded color stacks allow me, once again, to have softer colors with more depth.

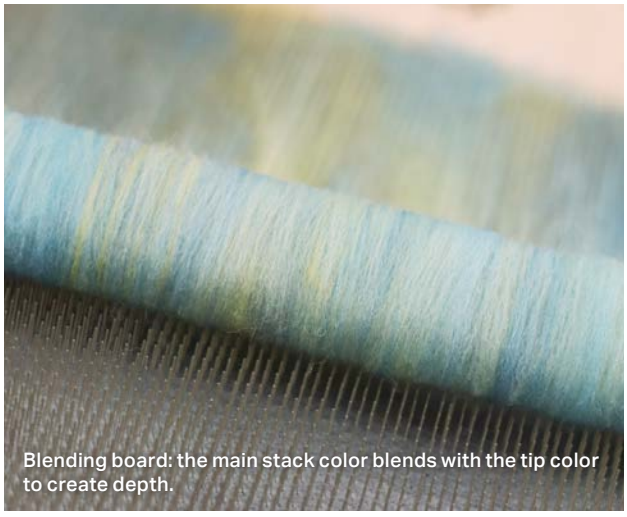
I hope my tips give you a chance to rethink your hand-dyed braids. Let the deconstruction begin!

Emonieiesha Hopkins is a Chicago, Illinois, fiber evangelist. She loves to gather her wool and good fiber friends, any time, any place. Emonieiesha can be reached via hopkinsfiberstudio.com.

When the fiber is braided, it is hard to see whether the colors are dyed in short bursts or longer lengths.



Notice the stacks from the deconstructed braid have tips with a different color.



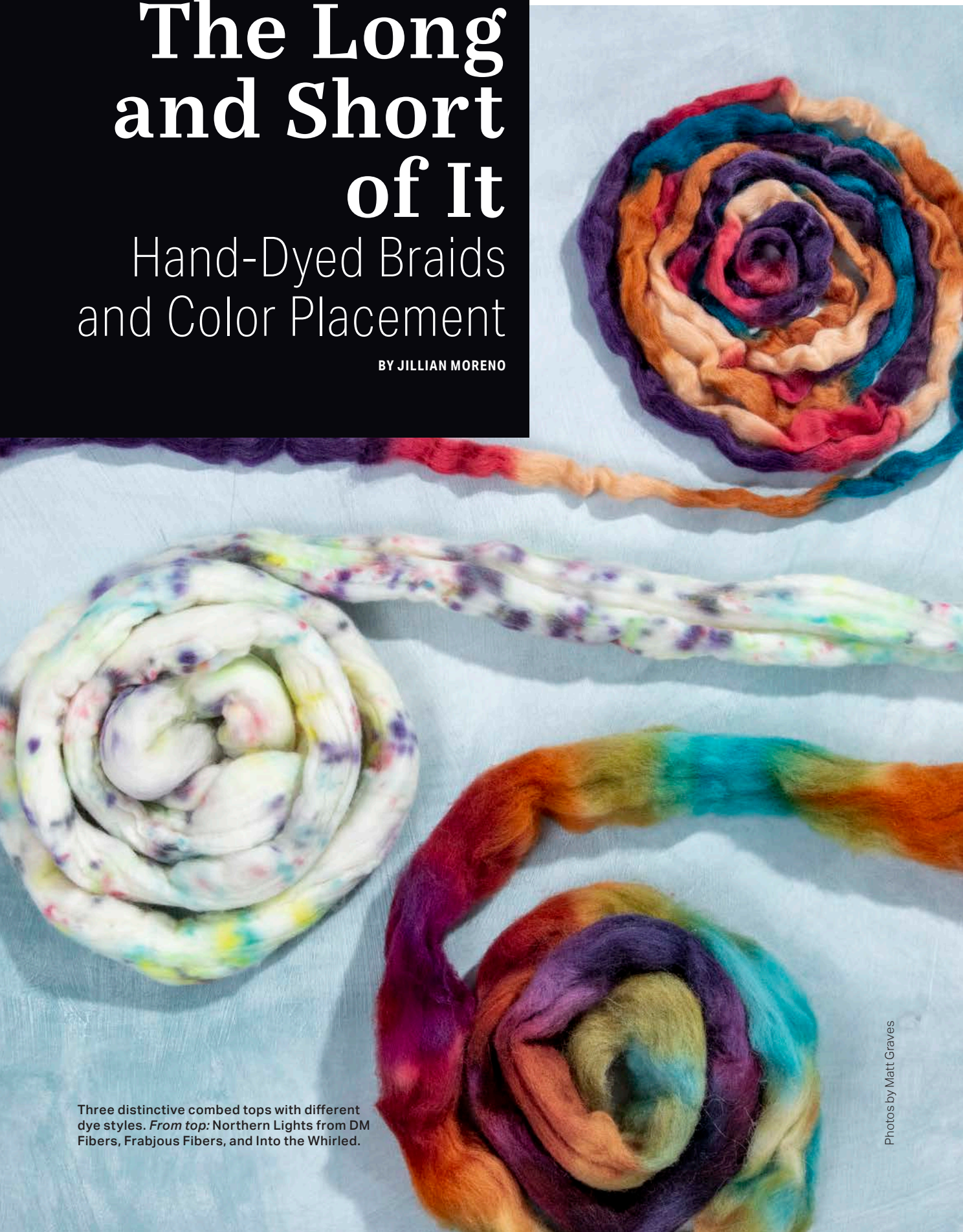
Blending board: the main stack color blends with the tip color to create depth.

Drumcarder: the blue and yellow colors overlap and blend into a green color not found in the braid.

The Long and Short of It

Hand-Dyed Braids and Color Placement

BY JILLIAN MORENO



Three distinctive combed tops with different dye styles. *From top:* Northern Lights from DM Fibers, Frabjous Fibers, and Into the Whirled.

Photos by Matt Graves

Hand-dyed and handpainted fibers have become ever present in spinners' stashes. When I teach classes about spinning braids, the number one question I get is, "How do I know what it will look like after I spin it and knit it?" The answer depends on many things, so my usual answer—the same answer every spinning teacher gives to many questions—is, "It depends." We really should make T-shirts.

I do have more detailed answers to that question, and here are two: It depends on how the fiber was dyed, and it depends on how you want to spin it. If you want to get better at knowing how your dyed fiber will turn out, the best thing you can do is to pay attention to your fiber and process.

Take a close look at your unspun fiber and then decide how you are going to spin it. This goes beyond just choosing a yarn structure; decide how you want the colors to play out. Is there a pattern or repeated color sequence in the braid? Do you want to keep the colors the same as in the fiber, manipulate the flow of the colors, or change the colors in some way? Even if you just let the colors do what they want, a little intention really helps you feel more satisfied with the yarn you spin.

Not sure where to start? Here are three dyed fibers that I will walk you through, starting with identifying dye style and then sampling handspun variations.

DYE STYLES

Dyers have different approaches to color placement. The length of the color repeats, the sequence of colors, and even the overlapping or shading that occurs between colors are all ways that dyers leave their mark.

Northern Lights from DM Fibers

Fiber: Corriedale combed top
Color: Lake Trout

Looking at this top, I can see that the dye pattern consists of short, clear lengths of color that repeat regularly. There are clean breaks between the colors. What this tells me is that it will have a repeating stripe when spun, and the stripes will be short with little marling between colors.

I also note that the fiber itself is a narrow strip, which also contributes to short lengths of colors when spun. If the same lengths of color are dyed on a combed top that is twice as wide, the colors would be twice as long when spun.

Into the Whirled

Fiber: Jacob combed top
Color: Equilibrium

Into the Whirled has a unique style of dyeing that is both regular and irregular. Many of the colorways change from one end of the braid to the other or

Jillian chose three combed tops to compare: (*from left*) Corriedale Northern Lights from DM Fibers, Jacob from Into the Whirled, and Bluefaced Leicester from Frabjous Fibers.

Jillian created her sample sets using several fiber preparation techniques and additional fibers. Accent fibers (*left*) can be drafted and spun with the primary colorway. Likewise, the primary colorway can be split into strips and reorganized so that different colors are drafted at the same time (*pair of strips on right*).

ticktock between two distinct colorways within the braid that share some colors. This style is especially lovely in large projects that allow the color sequences to unfold all the way.

The lengths of the individual colors vary from short to several inches long, and colors fade from one to another without hard breaks. This dye style will develop a stripe pattern that is a mixture of long and short stripes. There will be more marling between colors in the singles as the colors merge and overlap.

Frabjous Fibers

Fiber: Bluefaced Leicester combed top
Color: Graffiti

This speckled dye style on unspun fiber is fairly new. Dye is applied in dots and dribbles randomly and sparingly. These braids almost always have a white base with a lot of the white showing. This surprising dye style may not look like much in the braid, but it is subtle and lovely when spun.

Because the dye is applied randomly, there is little to no striping, especially in large projects. Because there is so much white, speckles of colors that look bright in the braid will fade as they blend with the white, and subtle colors in the fiber will become even lighter when spun.

SPINNING STYLES: THREE DIFFERENT WAYS (PLUS ONE)

I spun each braid three ways to show how the dye patterns can be manipulated. These samples are just the tip of the iceberg.

The finer the yarn, the more the colors blend and the more subtle the outcome, so I made my samples chunky so you can see what is happening with the color more easily. My samples are two-ply yarns that were spun with a woolen draft.

Also, I lied. I actually spun each of the fibers four different ways if you include the singles. When I spin sample yarns for color, I always start with spinning singles of the colorway so that I have a record of what the color looks like with no manipulations or additions.

I had 4 ounces of each fiber to spin and divided each into four 1-ounce amounts. I spun the two repeating colorways with four techniques: as a singles, as a fractal yarn, drafted on itself, and drafted with a natural gray fiber. The speckled fiber got its own plan.

Northern Lights from DM Fibers

Singles

The colors in the singles are short and regular. Some of the colors don't make it across the swatch. I really like sampling with singles rather than spinning a two-ply with the colors matched because it shows the clearest version of the colors, and it's so much easier than trying to spin a matching plied yarn.

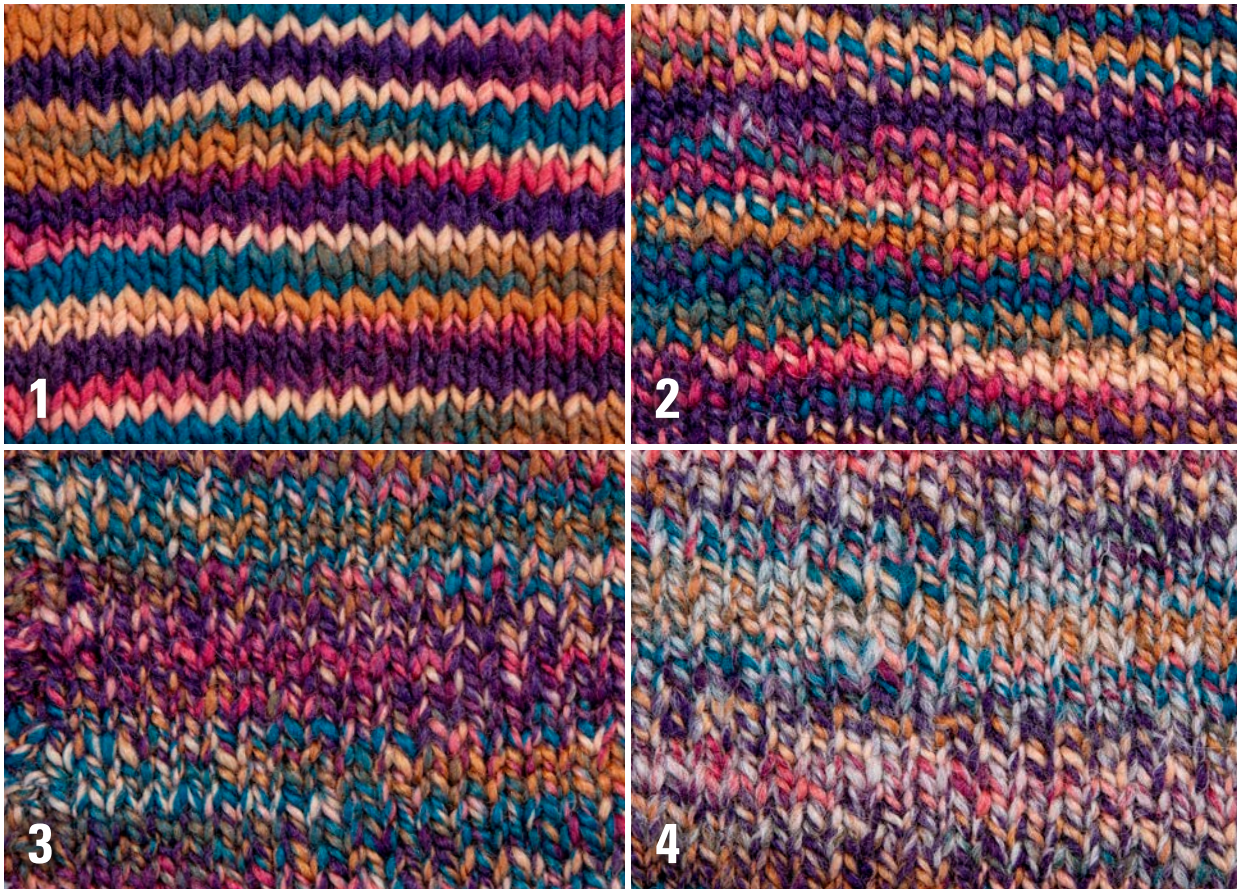
Fractal Spin

I like stripes fine, but I do get sick of knitting clear, bright stripes. To keep the patterning of a colorway but break it up a little, I spin a yarn fractally. A two-ply fractal spin pairs a long color run with a shorter color run of the same colorway. To make this happen, divide your fiber into halves, vertically. Spin one half onto a bobbin. Divide the other half into smaller vertical strips and spin these one after another onto a second bobbin. Ply the two singles.

What happens is the colors match in the ply creating solid stripes in some spots, and the shorter colors ply into marls against the longer color ply. What it looks like is stripes with stripes. The colorway is represented in the matching stripes, and the marled sections look like broken stripes. It gives a lot of visual motion to an otherwise very regular stripe pattern, which to me can look pretty flat. (For more on this method, see "The Fractal Stripe" by Janel Laidman in *Spin Off*, Summer 2007.)

Drafting on Itself

If I like a colorway but do not want stripes, I draft



Northern Lights knitted swatches using four different handspun yarns. 1. Singles 2. Fractal spin 3. Drafted on itself 4. Drafted with gray.

the colorway on itself (Photo 3 on page 23) and then ply it. To do this, divide the fiber vertically into halves and hold the two strips of fiber together so each one starts with a different color. As you spin, draft them together as though they are one fiber. This is also called combo drafting. If you are trying this method for the first time, go slower than your usual drafting speed, and it may be easier if you use thinner strips of fiber.

The result in yarn and knitted fabric is tweedy, chunky spots of color. With this fiber's short color repeat, there is only a hint of striping. If you spin this style very fine, the resulting yarn and fabric are more blended.

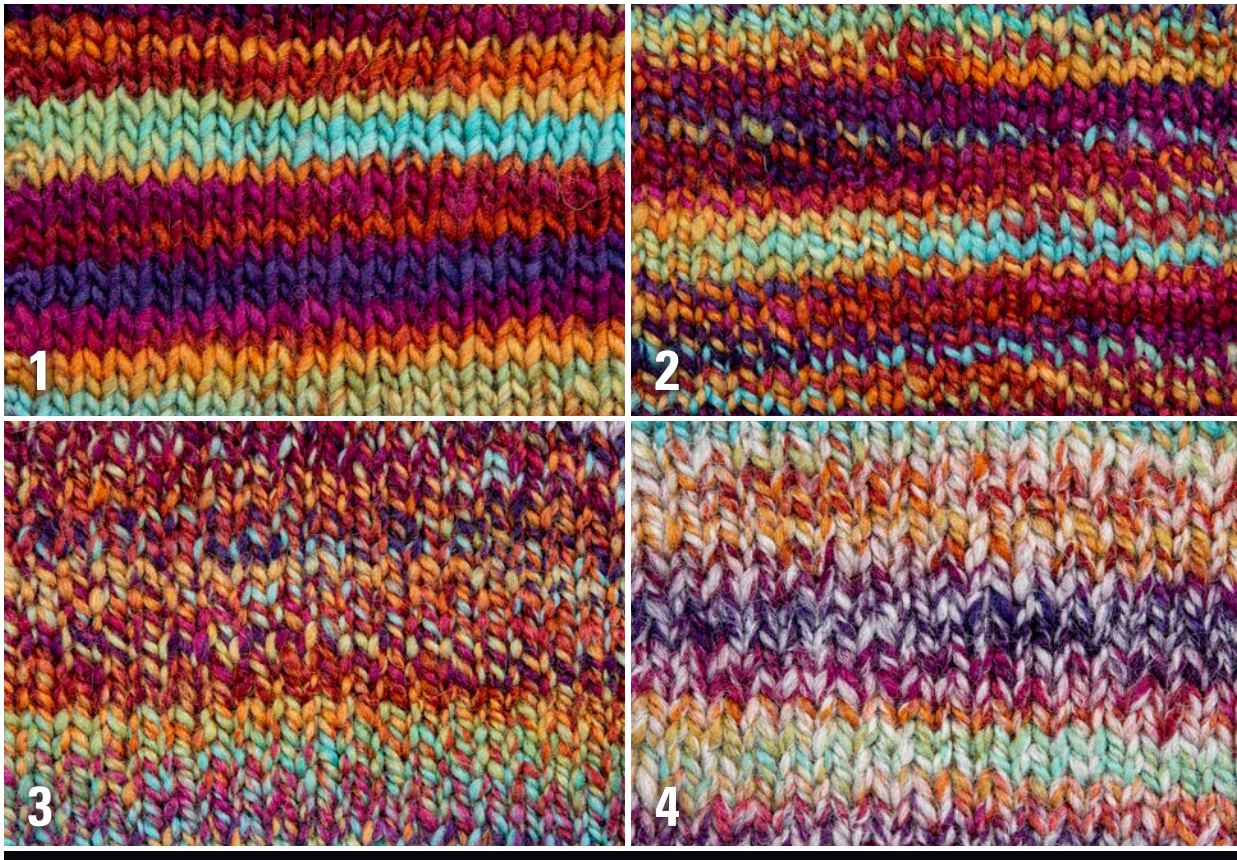
Drafting with Gray

If I want to shift a colorway lighter or darker, my go-to method is to draft it with a natural color. I almost always use gray because I like the earthiness it adds to the colors. This method is like the previous one, but you draft a strip of gray fiber with a strip of dyed fiber. Experiment with the amount of gray; I usually use a quarter or third of gray and three-quarters to two-thirds of dyed fiber because I want the colorway to be lighter but prominent. The effect is a lighter-colored tweedy yarn. In this sample (Photo 4 on page 23), you can see the stripes of the original colorway, especially the dark green, ghosted in the background.

Into the Whirled

Singles

In these singles, I see long stretches of color and the two distinct color sequences repeating within themselves and between the two sets of colors. Remember if you are spinning singles that will not be



Into the Whirled knitted swatches using four different handspun yarns. 1. Singles 2. Fractal spin 3. Drafted on itself 4. Drafted with gray.

plied, use less twist in your yarn to avoid bias in your knitted fabric.

Fractal Spin

A fractal yarn in a colorway with long color runs will have more matched striping. Rather than stripes within stripes, I describe this pattern as disrupted stripes. Even though there is matched color, I find more visual excitement in the knitted fabric than there would be with plain stripes because of the marling.

Drafting on Itself

Because of the two separate blocks of color repeats in this colorway, this style of spinning really mixes the colors. The lighter color block lifts the overall color feeling to a brighter, lighter color. This one really looks like confetti to me.

Drafting with Gray

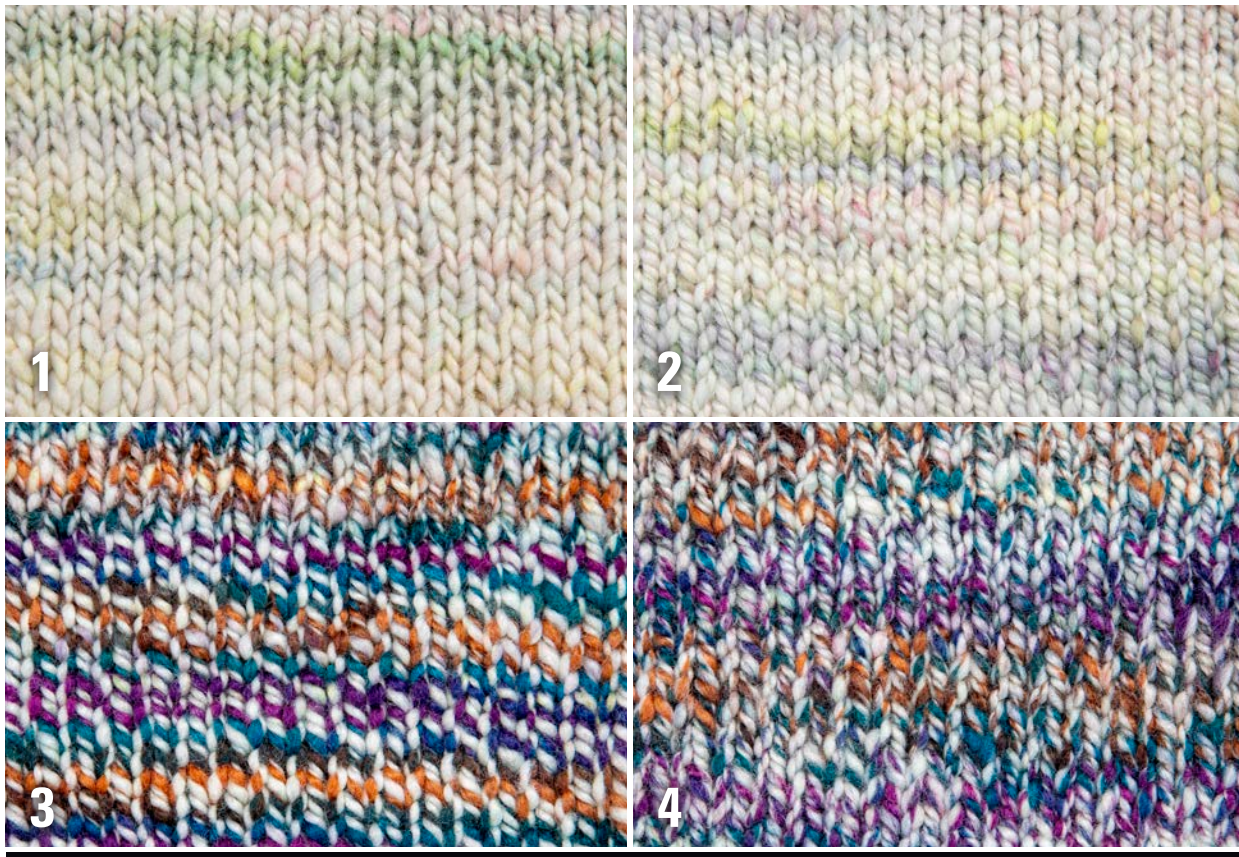
When I show this type of sample in my classes, some students don't believe that it comes from the same colorway as the others. The gray shifts the overall colors to something paler, but the striping is still there, though muted. If spun finer, the colors blend and mute more and the stripes fade.

What excites me about these yarns (besides the fun of sampling) is that they all go together perfectly. These styles of manipulation could be used in the same project and it would make something really unique and very different than, say, 12 ounces of matching stripes.

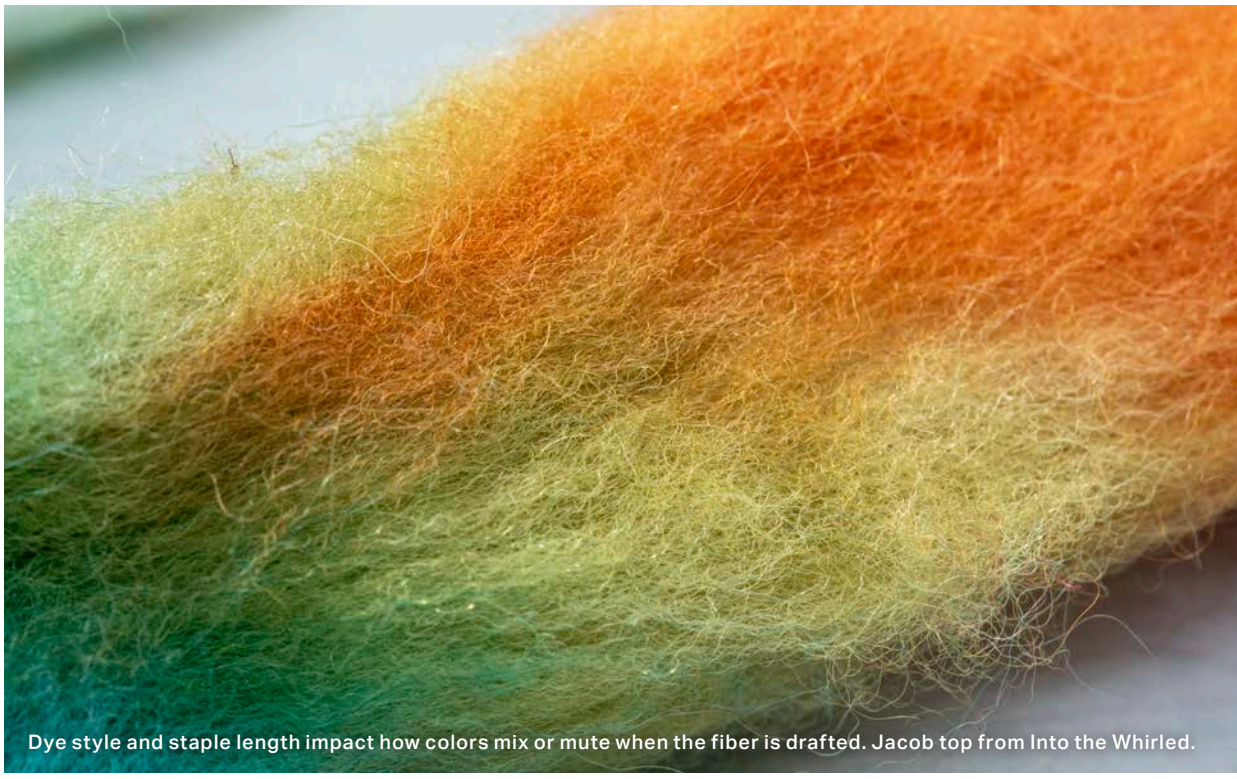
Frabjous Fibers

Singles

This particular speckled colorway is subtle. In the singles, the speckles barely show. I think what I like



Frabjous Fibers knitted swatches using four different handspun yarns. 1. Singles 2. Two-ply 3. Plied with dyed top 4. Drafted with dyed top.



Dye style and staple length impact how colors mix or mute when the fiber is drafted. Jacob top from Into the Whirled.

about speckles is there is almost no way to predict them. Handspun speckled fiber is even more random than yarn that has been dyed speckled. This dye style still surprises me when I spin it, and I had to take my knitted singles to a window to find the shy spots of colors.

Two-Ply

Because there is no pattern to speckle dyeing, it won't spin into a fractal-style yarn. Instead, I spun a two-ply and let the colors match where—and if—they wanted to. Plying a yarn intensifies color, especially if it matches, and I was surprised and delighted to see the light stripes that appeared.

Plying with Dyed Top

I do mix and blend speckled fiber with other fibers, mostly hand-dyed fiber, especially if I want to lighten a colorway. It is different than using just white in conjunction with a braid because there is additional color.

When singles from the speckled top and singles from a dark braid are plied together, it creates a high-contrast marl that is less stark than plying with a natural white fiber because of the subtle speckled color hiding in the yarn.

Drafting with Dyed Top

Drafting speckled fiber with a darker colorway lightens and loosens the darker colors. As with plying, it's similar to using white but there is a little something else going on. It's unpredictable in a good way. To increase the randomness that I like with this mixture, I don't try as hard to draft the two fibers together evenly, so the speckled fiber is not evenly spread through the dark fiber. Looser drafting can add depth.

I've learned over many years and through many mistakes that taking a quick look to assess the dye style and pattern of your fiber and then deciding how you'd like it to look in the end really contributes to being a happier color spinner.

Resources

DM Fibers, dmfibers.com
Frabjous Fibers, frabjousfibers.com
Into the Whirled, intothewhirled.com
Moreno, Jillian. *12 Ways to Spin Handpainted Top.* Video. Fort Collins, Colorado: Interweave, 2015. shop.longthreadmedia.com

Jillian Moreno is the author of *Yarnitecture: A Knitter's Guide to Spinning: Building Exactly the Yarn You Want*. She loves to knit, weave, and stitch with handspun yarn, and she enthusiastically encourages spinners to relax and be happy making and using their handspun. Keep up with her fiber exploits at jillianmoreno.com.

A very full 5-gallon rainbow pot.

Photos by Martha Owen unless otherwise noted

One-Pot Magic

Surprising Natural-Dye Rainbows

BY MARTHA OWEN

Color has been the most exciting part of my 40-year journey with sheep and wool. I realize there was a time—that I can barely remember—when I didn't spin, and I didn't dye. I enjoyed looking at and using color back then, but when I took my first spinning and dyeing class and pulled my first handspun out of our first dyepot, I realized I had found what I was hungering for: colors that reflect nature.

All the way along, my fiber adventure has been marked by color—from pedestrian to pastel to vivid—which includes fostering a smorgasbord flock of Romney, Corriedale, a bit of Cormo and Bluefaced Leicester, and a pride of Shetland sheep. What quirky, colorful characters.

Somewhere along the road, my sister-in-law, a natural dyer and gardener, showed me how she had arranged chunky natural dyestuffs on fleece in an enamel baby's bath. And she got beautiful spots! I have been running with this idea ever since. What about a dyepot with a variety of natural Shetland fleece colors

and a variety of dyestuffs to create a rainbow of dyed spinning fibers?

DISCOVERING INADVERTENT COLOR

A rainbow dyepot is one-stop dyeing that yields many color possibilities. It is a method that I often teach to students at the John C. Campbell Folk School, and it is a way to get many shades quickly for yarn design experiments.

The idea is simple. Chunky natural dyestuffs, cheesecloth, and mordanted fleece are layered in a dyepot, making a big woolly sandwich: dyestuff, cheesecloth, mordanted wool, cheesecloth, dyestuff, and so on. Very little water is added to the pot, which is placed on lower heat for longer than for a single-color pot. I use natural dyestuffs that are hard and dry, so there must be time for everything to soften and release dye into the mordanted wool. There are concentrations of color around each dye source and blends of colors that occur between the dyestuffs. Colors are more intense and vivid on the bottom of the pot.

If you are new to natural dyeing or are a true scientist, enjoy the exploration of inspirations that come out of a dyepot using several chunky dyestuffs at once. It is an "anything is good" experience. This appeals to me because my personal worldview is to nurture my desire for random and unrepeatable combinations.

Equipment and Materials

- Enamel or stainless steel dyepot
- Long-handled spoon
- Cheesecloth
- Washed, dried, weighed fleece or other protein fiber
- Natural dyestuffs, such as black walnut, madder, marigold, and cochineal
- Alum (potassium aluminum sulfate)
- Cream of tartar (tartaric acid)

How Much Mordant?

Mordants and dyes are typically measured in relation to weight of goods (WOG), in this case, clean, dry wool. For the samples included here, I used the following:

Shetland fleece from Martha's flock weighed and ready to be mordanted.

Photo by Matt Graves

A view of the first layer on the bottom of the rainbow pot.

Cooked and ready to disassemble.

10% WOG alum and 5% WOG cream of tartar. For example, if you want to mordant an ounce of wool (about 28 grams), you will need 2.8 grams of alum and 1.4 grams of cream of tartar.

Start with washed, dried fleece. For the pot shown here, I started with four natural sheep shades. Weigh the fiber and form into loosely tied cheesecloth bundles. The amount of wool you need will depend on the size of your pot. Label each bundle with masking-tape labels and a permanent marker. Soak the fleece bundles in water to thoroughly wet them before they go into the mordant or dyepot.

To prepare the mordant pot, fill an enamel or stainless steel pot with water. There should be plenty of room to stir and move the wool around. Based on the clean wool weight in your bundles, weigh the alum and cream of tartar, and dissolve each one in the pot: alum, then cream of tartar. After dissolving both of the mordants, add the wetted woolly bundles. Let the mordant pot come slowly up to a simmer and hold it there for an hour. Turn off the heat and let the wool cool in the mordant pot, preferably overnight.

Next day, fish out the bundles and soak them one time in a bucket of fresh water of similar temperature. Remove excess water and dye the wet wool now or lay it out to dry. You can dye at any time once the mordant is applied. If the wool is kept in good condition—dry and safe—it just needs to be rewetted when you have time for a dye day or when your flowers are blooming!

How Much Dyestuff?

I confess: I never, ever measure my total amount of dye for a rainbow pot. I set myself a limit for the amount of each dyestuff and don't use any more than that. If I seem to have more than I need when I start making layers, I save it. If I have big undyed areas, it's okay! Anything is good.

However, if you are new to natural dyeing, some general guidelines can help you build your rainbow pot. Dyestuffs, like mordants, are typically measured in relation to WOG. For a pure-color marigold pot, a typical amount would be 100% to 300% marigolds WOG. For madder root, it is 25% to 100% WOG, and for cochineal, it is 1% to 5% WOG. Walnuts? Use a

bunch. Remember that each dyestuff acts differently, but generally, the more dyestuff, the darker the color. Madder and cochineal are rather dear and very powerful, so I use as little as possible to get a good color strike.

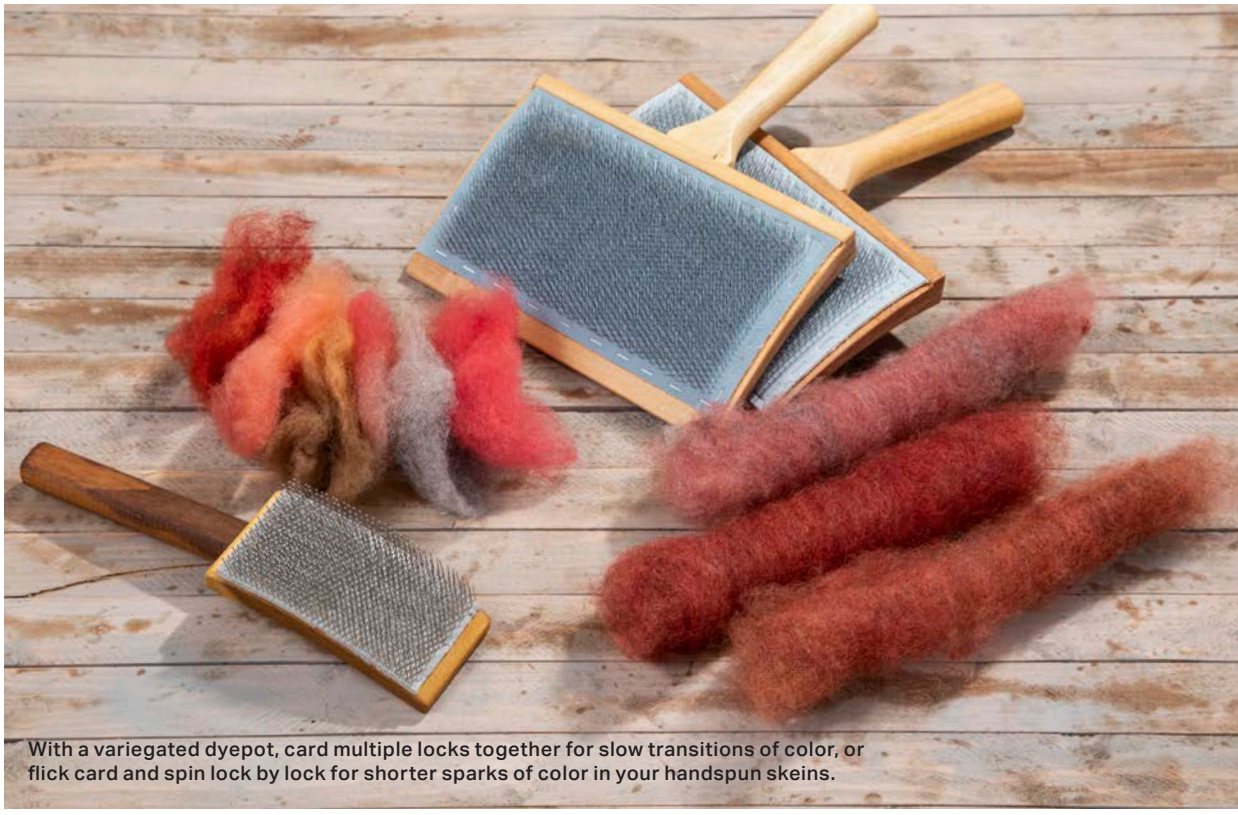
Dyepot Setup

Now the excitement builds! Like a good chef, gather your rainbow pot ingredients: dyestuffs, cheesecloth, and wetted mordanted wool. Divide the wool into three fairly equal batches. Now you are ready to start layering. In the rainbow pot shown here, I used marigold, cochineal, madder, and walnuts to dye four colors of fleece.

On the bottom of the pot, place some of each dyestuff. You want a "dump" or pile of each; do not sprinkle. The piles can touch or not. Cover this dry dyestuff with cheesecloth, forming a layer, and fold it back. Now, open all of your woolly bundles, create a multicolor layer of the mordanted wool in the dyepot, and lay the folded cheesecloth over the wool, tucking it in. From the bottom, you've now layered dyestuff, cheesecloth, wool, and cheesecloth.

Using different colors of wool in the pot creates a variegated effect.

Photo by Matt Graves



With a variegated dyepot, card multiple locks together for slow transitions of color, or flick card and spin lock by lock for shorter sparks of color in your handspun skeins.

Photo by Matt Graves

Top: Gradient of rolags (also called rolls or rows) created using dyed Shetland from the rainbow pot with light gray and black natural colors. *Bottom:* Gradients of rolags created with undyed and dyed moorit Shetland (*left*) and undyed and dyed white and black Shetland (*right*).

Photo by Matt Graves

Continue adding layers in this way until you have used up your supplies or until the pot is nearly filled. Add water by dribbling a small amount down the side of the pot. You have enough water when you can just see the pot's water level when pressing down on the whole woolly pile with a long-handled spoon. There shouldn't be very much water because you don't want the dyes to mix or the wool to float. Keep poking the layers with a spoon to look for the water and add a little more as needed. Put the dyepot on medium heat. This is warm enough; you are not in a hurry now. Do not stir. You can poke but do not stir.

After at least an hour, check the colors on the top layer of your pot and press down with a long-handled spoon to ensure there is still liquid in the pot. When you are convinced that the colors look good (about three hours for my pot), carefully disassemble the contents of the magic pot. This is best done when it is cool. Try not to drop the loose dyestuffs into the fleece layers, but if you do, the dyestuffs are chunky, so much of it will shake out.

If you have a spin dryer, place the freshly dyed fleece in it and put a small bucket under the downspout. Save any brightly colored dye water to pour back into the dyepot. There are other adventures still to be had! Carefully rinse the freshly dyed fiber a time or two and lay it flat to dry. Take a picture! While it dries, make a cup of tea and have a good think about all the possibilities for your beautiful fleece.

Resources

All dyestuffs except cochineal were collected in the Cory Brown Memorial Dye Garden at the John C. Campbell Folk School in Brasstown, North Carolina. Learn more at folkschool.org.

Dean, Jenny. *Wild Colour: How to Make and Use Natural Dyes.* London: Mitchell Beazley, 1999.

Martha Owen is a resident artist in spinning, knitting, feltmaking, dyeing, and surface design at the John C. Campbell Folk School in Brasstown, North Carolina. Her adventure in spinning and natural dyeing began at this very school in 1978. Since 1980, Martha's extended family has included sheep, Angora rabbits, and Great Pyrenees and border collies. Also a banjo player and storyteller, Martha's interest in sheep, wool, music, and dance has carried her joyfully around the world. Her children say she is a wool nerd, but her sheep say she is outstanding in her field! Learn more at folkschool.org and on Instagram @marthaowenwoolens.

Carded locks organized from lightest to darkest. These are all from the same fawn *katmoget* Shetland ewe.

Photos by Matt Graves unless otherwise noted

Katmoget Shetland

Spinning a Natural Gradient

BY JENNIFER JOHNSON

As a shepherd, one of the many traits that I appreciate about Shetland sheep is their famous range of fleece colors. With the possibility of 11 main natural colors and more than 30 recognized marking patterns, the combinations can make for a pretty picture when a flock is grazing on pasture. These color variations can also result in some very interesting yarns without the aid of a dyepot.

The names of Shetland sheep colors and markings—such as *emsket, flecket,* and *yuglet*—are drawn from Norn, an ancient language of the North Atlantic. Many Shetland sheep breeders around the world continue to use these names when describing the Shetland patterns of the sheep. Two marking patterns that make beautiful gradient yarns are *katmoget* and *gulmoget*. *Moget* means the belly is a separate color from the rest of the body. Katmoget is described as having a light-colored body with dark belly and legs and distinct facial markings. Sheep with this pattern will have dark diagonal markings between the eyes, which makes them look like they have angry eyebrows. Gulmogets have light-colored points between their eyes, outlining the eye and pointing toward the nose.

We have many katmoget-patterned sheep in our flock because we used katmoget rams for several years, and since katmoget is genetically dominant over some other marking patterns, breeding for lambs that exhibit the katmoget pattern is not difficult.

Katmogets can be brown-based—fawn katmoget—or black-based—grey katmoget.

A KATMOGET NATURAL GRADIENT

The color shift from a dark belly to a light color on the topline identifies this marking pattern, and I enjoy taking advantage of this gradual color shift in my naturally homespun gradient yarns. If you are working with a gulmoget, it's the same principle, just reverse the color descriptions. With gulmoget, you will get a larger quantity of dark-colored wool, and with katmoget, you will get a larger quantity of light-colored wool.

Shearing

When my shearer works on a sheep, he starts with the belly wool, discards it, then begins shearing the balance of the fleece, which I will sell as a raw fleece.

The belly wool is typically discarded from most breeds of sheep because it tends to be short, dirty, and very difficult to process. For a katmoget, this is a shame because the belly is where most of the darker fleece is found. If you are buying a katmoget fleece that is heavily skirted, you will probably not get as much dark wool because the dark sections are typically found on the perimeter of a shorn fleece and therefore disposed of during the skirting process when a farmer is preparing the fleece to sell to a handspinner.

No two sheep are alike, and sometimes the darker bits extend upward and survive the skirting process to become part of the nice, clean fleece that you can buy from a farmer and turn into a gradient yarn. You can also make arrangements with the shepherd to provide an unskirted fleece and retain the belly wool. You won't get as much usable wool from the belly, but if you have the time and want more dark portions for your gradient yarn, this is the optimal solution. Of course, you can always add fleece from other animals to enhance your gradient yarns.

Shetland fleeces are a manageable size; most of my raw fleeces are around 2 pounds after skirting. I can usually get three or four DK-weight skeins averaging 350 yards from my skirted Shetland fleeces. When spinning one of my katmoget fleeces, three of the four skeins will be more like a variegated solid. The fourth skein is the fun one that will show the gradient, using the very dark bits that I separated out during carding.

Preparation

After I wash the fleece and it is completely dry, I flick card the individual locks and separate out those that

You can see the shift from dark underside to lighter colors on the sides and topline of this *katmoget* ewe lamb in Jennifer's flock.

A *katmoget* sheep being shorn shows the color shift from light gray to steely black.

Photos by Jennifer Johnson

are darker than the main part of the fleece. Then I add enough main-body wool to yield about 3 ounces of flicked locks. My goal is a 3-ounce skein of two-ply gradient yarn that shifts from dark to light.

Next, I sort the individual locks into three or four piles of locks by shade. Each of the piles are then split into two equal sections using a scale, so they are exactly the same weight. If I have created four piles of shades, I will end up with eight piles of carded locks—four piles for each ply.

I like to place all eight piles into individual baskets or containers. Reusing the large plastic bins that pretzels are sold in is very handy for this.

Spinning

I always begin with the lightest locks so that the darkest portion is at the beginning of my bobbins when I ply. This way, I minimize the risk of the precious darker bits of fleece having a barber-pole effect when plied with lighter colors. Even though I weigh the portions with a scale and spin as carefully as I can, I always end up with one of the plies being a little longer than the other. Because the darker portion is always going to be the smaller quantity when working with katmoget, I want the darker portion to be distinctly solid for as long as possible.

When I am ready to begin the first bobbin, I grab the container with the lightest color and carefully sort out the locks in this pile from lightest to darkest on a flat surface near my wheel. It is surprising how much variation in color there is, even within the sorted piles, and I want to take advantage of this very subtle shift in color to achieve a lovely gradient yarn. Usually when I get halfway through each pile, I begin introducing the locks from the next slightly darker portion of flicked locks. As I work, I keep watching to make sure my locks are still organized lightest to darkest.

Plying is straightforward; there are no real tricks here other than that as the bobbin fills, I nudge the flyer hook on my Majacraft Rose over a little at a time so that I can clearly see the gradient develop on the bobbin as I work.

Left: Four containers of shades to be spun into one of the two plies for the final gradient yarn.
Right: Gradient singles ready to be plied.

Photos by Jennifer Johnson

Dina Kringstein purchased one of Jennifer's handspun *katmoget* gradient skeins and knitted a gorgeous Fade and Flip shawl. This Amanda Schwabe pattern makes great use of gradient yarns and is available on Ravelry.

Jennifer's two-ply fawn *katmoget* gradient yarn.

WHAT TO MAKE?

The yarn that results from this process will generate a lovely, gradual gradient, which I've had customers use for knitted hats, cowls, shawls, and many other projects. I also have had customers use the gradient with one of the solids from the same ewe for larger items such as sweaters or ponchos. I find it so satisfying to create a multicolored yarn from an individual ewe's fleece, keeping her wool intact for one special project. It is also a wonderful way to highlight a Shetland marking pattern that is fairly easy to find in most Shetland flocks.

Jennifer Johnson and her husband, Rich, raise finewool Shetland sheep at Whispering Pines Farm. Learn more about the flock at softshetlandwool.com. The Johnsons also produce a YouTube vlog called Soft Shetland Wool. Tune in at youtube.com/c/SoftShetlandWool.

A common knitting trick, holding multiple yarns together, inspired this ombré cowl and highlights the vibrant colors in a 4-ounce braid of handpainted fiber.

Photo by Matt Graves

Salt Spring Cowl

A Handpainted Ombré Gradient

BY ELISE YOUNG

Handpainted fiber is my favorite thing to spin. I love the way it looks unspun and braided into bumps full of pops of delicious color, and I become mesmerized by the ever-changing hues as they run through my fingers and onto my wheel's bobbin. But as much as I love spinning handpainted braids, I don't always find a use for the finished yarn. Four ounces of most fibers spun in my default yarn produce too much yardage for a small knitting project, such as a hat, but not enough for anything larger. And with all the time, money, and effort that goes into producing handspun yarn, I want to see my efforts front and center and use every last inch.

While thinking of all of the ways I could extend a single precious braid, it occurred to me that, as a knitter, I've made several projects holding commercial yarns double or triple to create marled and ombré effects. As a spinner, I could use the same technique during the plying stage to create an ombré yarn sequence for knitting a larger project.

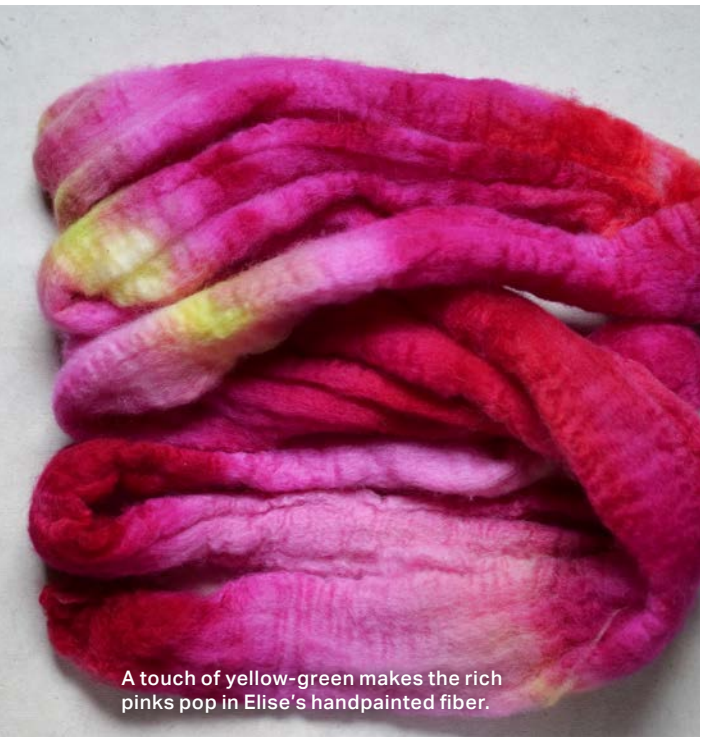
After figuring out a simple way to divide and ply my fiber, I designed this cowl to showcase the finished yarns. Worked entirely in garter stitch and knitted on the bias, it's a simple project with a strong graphic sensibility. The cowl highlights the beauty of the handpainted fiber while gently transitioning to a contrasting solid color. And it can be worn long as a striking accessory or doubled up for more protection against the fickle spring weather.

DYEING NOTES

Sourcing the perfect handpainted braid of fiber for this project proved difficult, thanks to the COVID-19

Due to the pandemic, Elise could not source the handpainted fiber she desired, so she dyed her own.

Photos by Elise Young unless otherwise noted



A touch of yellow-green makes the rich pinks pop in Elise's handpainted fiber.

The subtle changes in color, from rich pink to creamy natural, are evident when the skeins hang side by side.

pandemic's effect on both indie dyers' stock and United States and Canadian cross-border shipping. I was looking for a tonal mix of bright pinks, which I thought would pair well with a natural, cream-colored solid, showcasing both the marling and optical blending of the ombré-plied yarns. Finding nothing available locally, I decided to dye my own.

I chose a creamy Bluefaced Leicester combed top as my base. After soaking the fiber in a citric acid and water solution, I drained it and placed it on towels to remove most of the water. (I wanted it damp, but not soaking.) Next, I laid the fiber out on lengths of plastic wrap, folding the fiber in thirds to create three identical handpainted strips that would become my three handpainted singles. I applied four colors of premixed acid-dye solutions in red, hot pink, light pink, and yellow-green, using sponge brushes and flipping the fiber over after one side was complete to make sure the color saturated each section. I then folded the top and bottom edges of the plastic wrap over the fiber along its length, rolled the whole thing up, and put it in a steam bath on the stove top for 40 minutes to set the dye, taking care to keep the water temperature at just a simmer. After allowing the fiber to cool completely overnight in the pot, I unwrapped it, rinsed it with room-temperature water, and set it outside to dry.

SPINNING NOTES

I spun the singles on my Schacht Sidekick using its high-speed whorl, which has a ratio of 12:1. I used a short-backward draft, treadling once for every inch and a half or so of drafted fiber. After spinning each portion, I rewound the singles onto new bobbins using my Electric Eel Wheel (EEW 5.2) at a distance of about 10 feet to even out the twist. I let the singles rest for a couple of days and then wound them into center-pull balls on my ball winder. After struggling to ply from my center-pull balls of fine, sticky singles, I decided to wind the plying balls by hand for the remaining three yarns (see page 41). I then plied the singles together on my Sidekick, using the same high-speed whorl and counting 12 treadles for every arm's length of yarn

(about 36 inches) to achieve a twist angle of about 25 degrees. I finished the yarns in a hot bath with a drop of Eucalan, gave them a quick snap, and then hung them to dry.

Ombré Plying Method

For the cowl, I used two 4-ounce quantities of fiber—one handpainted and one solid—and spun a set of four yarns that gradate from solid to handpainted by switching out the plies.

1 Begin by dividing each of the fibers into three equal portions.

2 Spin each portion into singles.

3 Wind each of the six singles into center-pull balls (or, if center-pull balls are troublesome, see Elise's Tip at right).

4 Create four different three-ply yarns as follows.

Yarn A: Select two of the solid-colored center-pull balls and ply two ends from one ball with one end from the other ball; half of the second ball will be left over for Yarn C.

Yarn B: Use the third solid-colored, center-pull ball and ply its two ends together with one end from a handpainted center-pull ball; half of the handpainted ball will be left over for Yarn D.

Yarn C: Choose a second handpainted center-pull ball and ply its two ends together with one end from the remaining partial ball of solid singles.

Yarn D: Use the third handpainted center-pull ball and ply its two ends together with one end from the remaining partial ball of handpainted singles.

Note: I was hoping to minimize long sections of matching color in Yarns C and D, each of which would use the same handpainted singles plied back on itself, so for these singles, I stripped the top into four, then divided two of those strips in half again, spinning the quarter portions first, followed by the eighths. I stripped the remaining handpainted fiber, destined for the third bobbin of singles, entirely into eighths.

Elise's Tip: Plying Balls

If your singles are delicate or sticky and you are faced with plying from tangle-prone center-pull balls, prewind the three singles for each yarn into plying balls by hand. Make sure the tension is firm and even among all three singles as you wind. It's easiest to begin winding around a solid core, and I've found that the miniature tennis balls available in pet stores make great cores because they're firm with a grippy exterior.

MATERIALS

Fiber 4 oz braid of handpainted Bluefaced Leicester combed top; 4 oz of undyed (cream) Bluefaced Leicester combed top.
Yarn 3-ply; 155 yd each of A, B, C, and D; 1,420 ypp; 15 wpi; sportweight.
Needles Size 4 (3.5 mm): 32" or longer circular (cir). Adjust needle size if necessary to obtain the correct gauge.
Notions Marker (m); stitch holders (see Notes); tapestry needle.
Gauge 24 sts and 46 rows = 4" in garter st.
Finished Size 8¼" wide and 55½" circumference (see Notes).

Visit **spinoffmagazine.com/spin-off-abbreviations** for terms you don't know.

Notes

- This cowl is worked modularly, flat, and on the bias.
- The bias knitting will stretch considerably when worn.
- When changing colors, bring the new yarn under the old to carry the yarns neatly up the side of the piece.
- Mark the right side of the piece with a stitch marker or scrap yarn because both sides look the same.
- Spare circular needles in the same size or smaller than the main needle can be used for holding stitches.
- A circular needle is used to accommodate the large number of stitches and the modular construction.

STITCH GUIDE

S2kp2: Sl 2 sts as if to k2tog, k1, pass 2 sl sts over—2 sts dec'd.

10-Row Color Transition: Work 1 row with yarn 1, [2 rows with yarn 2, 2 rows with yarn 1] 2 times, then 1 row with yarn 2. Break yarn 1.

COWL

Part 1

With A and using the long-tail method, CO 3 sts.

Row 1 (WS) Knit.

Row 2 (RS) [K1f&b] 2 times, k1—5 sts.

Row 3 Knit.

Row 4 [K1f&b] 4 times, k1—9 sts.

Row 5 K5, place marker (pm), k4.

Row 6 K1f&b, knit to 1 st before m, k1f&b, sl m, k1f&b, knit to last 2 sts, k1f&b, k1—4 sts inc'd.

Row 7 Knit.

Rep Rows 6 and 7 twenty-seven more times—121 sts; piece measures about 14½" across bottom edge of triangle.

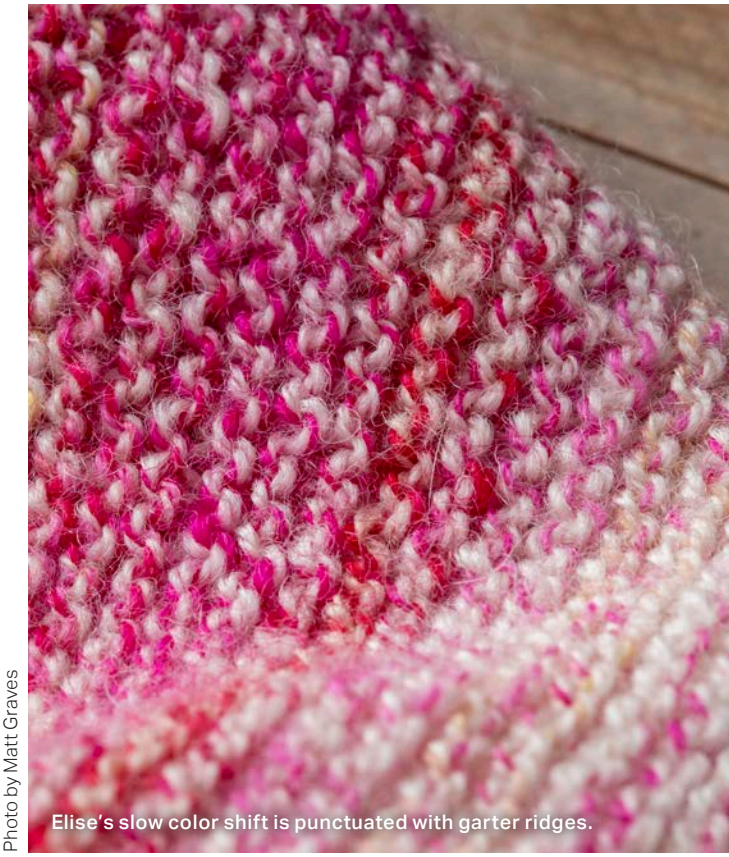
Work Rows 6 and 7 five times while working 10-Row Color Transition (see Stitch Guide), using A for yarn 1 and B for yarn 2—141 sts.

With B, work Rows 6 and 7 two times—149 sts; piece measures about 17¾" across bottom edge of triangle.

Next Row (RS) K1f&b, knit to 1 st before m, k1f&b, sl m, knit to last 2 sts, k1f&b, k1—152 sts.

Next Row (WS) Knit to m, remove m, place next 76 sts on holder—76 sts rem for left side.

Style in a long loop for maximum ombré effect or doubled for cozy warmth.



Elise's slow color shift is punctuated with garter ridges.

Photo by Matt Graves

Left Side

Row 1 (RS) K1, k2tog, knit to last 2 sts, k1f&b, k1.

Row 2 (WS) Knit.

Rep last 2 rows 5 more times.

Work Rows 1 and 2 five times while working 10-Row Color Transition, using B for yarn 1 and C for yarn 2.

With C, work Rows 1 and 2 six times. Place sts on holder.

Right Side

Return 76 held right-side sts to needle and, with WS facing, rejoin B.

Row 1 (WS) Knit.

Row 2 (RS) K1f&b, knit to last 3 sts, ssk, k1.

Row 3 (WS) Knit.

Rep last 2 rows 5 more times.

Work Rows 2 and 3 five times while working 10-Row Color Transition, using B for yarn 1 and C for yarn 2.

With C, work Rows 2 and 3 six times. Place sts on holder.

Diagram 1

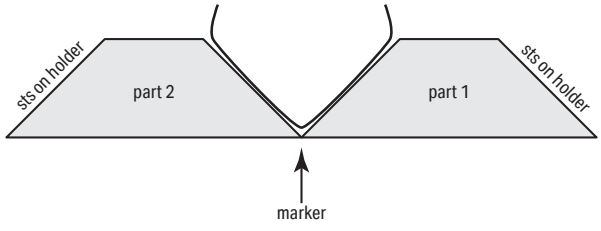
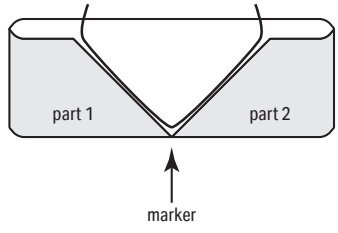


Diagram 2



Part 2

Work as for part 1, but do not place right-side sts on holder. Break yarn.

Part 3

With RS facing and holding end of needle with sts in left hand, pm, then transfer 76 held sts from left side of part 1 to left needle (see Diagram 1)—152 sts total.

Join C. Working first across part 1 sts then across part 2 sts, cont as foll.

Row 1 (RS) K1, k2tog, knit to 2 sts before m, ssk, sl m, knit to last 3 sts, ssk, k1—149 sts rem.

Row 2 (WS) Knit.

Row 3 K1, k2tog, knit to 2 sts before m, ssk, sl m, k1, k2tog, knit to last 3 sts, ssk, k1—4 sts dec'd.

Row 4 Knit.

Rep Rows 3 and 4 once more—141 sts rem.

Work Rows 3 and 4 five times while working 10-Row Color Transition, using C for yarn 1 and D for yarn 2—121 sts rem.

With D, work Rows 3 and 4 twenty-eight times—9 sts rem.

Next Row (RS) K1, k2tog, sl 1, remove m, return sl st to left needle, s2kp2 (see Stitch Guide), ssk, k1—5 sts rem.

Next Row (WS) K2tog, k1, ssk—3 sts rem.

Next Row (RS) S2kp2—1 st rem.

Fasten off last st.

Part 4

Transfer 76 held sts from left side of part 2 to needle, pm, then transfer 76 held sts from right side of part 1 to needle (see Diagram 2)—152 sts total.

Join C. Beg with Row 1, work as for part 3.

FINISHING

Weave in ends. Wet-block flat.

Elise Young is a knitter, spinner, and fledgling weaver who lives on Salt Spring Island. When she isn't tending goats, she likes to design knitting patterns. Find her online at illitilli.com.

Phots by Suzy Brown; illustrations by Ann Sabin Swanson

Next-Level Hackle Blending

Patterns for Color Management

BY SUZY BROWN

A blending hackle has a long row of tines, often with a second row of offset tines behind the first. Fiber is lashed (loaded) onto the tines and later pulled into a sliver using a diz. How the fibers are lashed on and dizzed off provides endless design possibilities.

I would like to introduce you to a new system for designing yarn, one in which you can take complete control of color placement and proportion to create a beautiful and repeatable preparation you will love to spin. To do this requires only the hackle, a simple tool with an epic degree of pointy-ness, to hold fibers in place for designing and blending. A whole new world of color design emerges in which the humble hackle rules.

THE PATTERN SYSTEM

My system is a simple one. In fact, when I was developing it, I wondered why I hadn't come to this so much earlier! It is a system that anyone can use to create what I call a *hackle pattern*. This template allows you to design a color sequence, create a key, and add notes about the assembly of the pattern. You can repeat the pattern as many times as you like, producing very similar color placements and proportions every time you use it. This is important because a single hackle load of fiber is never enough for an entire project. I get about 0.63 ounce (18 grams) of fiber with each hackle load, so several loads are needed, even for fairly small projects.

Materials

I like to create my patterns using dyed combed or commercial top. Combed top—whether dyed and prepared by hand or commercially—works well because it is consistent, it is easy to measure the same amount per lash, and it dizzes beautifully. In the examples for this article, I used a Merino and silk blend (80/20) dyed by Fibre2go in New Zealand. When using blends such as this, the staple lengths should be the same because we diz the fiber off the hackle from the tips. If short fibers are in the mix, they will come off last, and the colors will not be placed correctly.

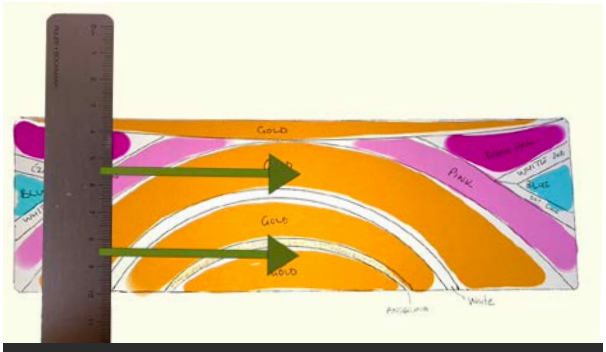
Making use of solid or semisolid colors gives me options; I can create a single pattern blend for my entire project, or I can use a section of hackled color to create highlights in an otherwise solid project. Using my pattern, I can also control which color will be dominant in the blend to either contrast or match with the project's main color. Variegated colors, such as in handpainted combed top, also work well, but I generally use only one handpainted fiber per pattern.

Creating and Reading a Pattern

Using pencil and paper or a drawing app, start with your basic hackle shape as a template. Then draw in your lines and add the colors! You do not need to create symmetrical shapes; in fact, a student in one of my hackle classes made a wonderful design with a drawing of her dog along the length of the hackle. She added the colors of her dog in the appropriate places and chose a background color that made a stripe that would

Suzy used only four commercial combed tops to create three very different hackle colorways.

See how Suzy created these colorways on page 48.



If a ruler is placed on the design and slowly moved in the direction you intend to diz, all of the colors on the leading edge of the ruler will be pulled into the diz. The yarn spun from the dizzed fiber will mix the colors together, creating marls and shading.

run the entire length of the fiber. Symmetry is born when you start repeating the pattern; the proportions and placements of color from your design will replicate with each new hackle load when dizzed and spun.

Read these patterns from side to side: from left to right or right to left, moving from one end of the hackle to the other. Imagine you have a ruler placed on the pattern and you are moving it horizontally across the design. Starting at the left (or right) of the pattern, you will see there are layers of color, so reading the full height of the layers tells you at a glance exactly how many colors, their proportions, and the level of mixing you will have at any one time in your dizzed top and final yarn.

How to Load from a Pattern

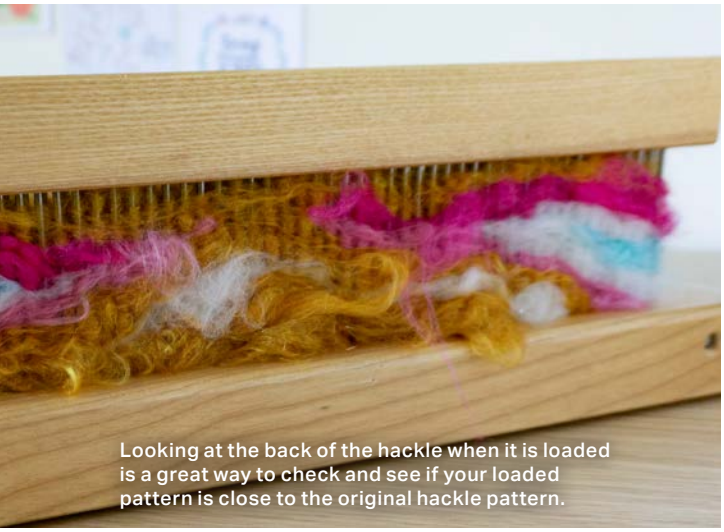
While the fiber will be removed from side to side, how it is lashed onto the hackle depends on the pattern. In the example patterns, I have included my loading notes and assigned the order for each color to be loaded.

Here are two helpful tips as you load your own patterns onto the hackle. First, count the number of lashes of fiber you add into each color block, shape, or area (and note them down). This will help you keep the amount of fiber consistent. Second, fill your hackle no more than one-half to three-quarters up the height of the tines. You need to leave space to loosen the fibers prior to dizzing.

Ready to Diz

The way you diz the fiber off the hackle is important. Start at one end of the hackle, drawing the full height of the fibers into a point and threading them through the largest hole in your diz. Keep the full thickness of the fiber feeding into the diz so the vertical colors are all picked up together.

Work across the width of the hackle once only, so diz all the way to the tines in each area before moving forward. This will ensure the pattern is not altered and your dizzed fiber follows the design properly. It's normal for some very short fibers to remain on the hackle after dizzing.



Looking at the back of the hackle when it is loaded is a great way to check and see if your loaded pattern is close to the original hackle pattern.

Three dizzed colorways created with the same solid colors and different hackle patterns.

Suzy's stack of swatches, sparkling with color and creativity (and a dab of Angelina).

Samples: *(from top)* White, Gold, and Pink.

Repeatability and Variation

Hackle patterns do have some variables that can affect the outcome. Even if you carefully weigh your fibers, there will always be slight variations when loading. Perhaps you add one smaller lash of color 1 or a larger lash of color 2. Minor variations in each hackle load will impact the resulting handspun.

Another source of variation can happen at the wheel. Drafting can pull colors from further along the fiber supply, or more of one color may be pulled when drafting across the top. These small variations give character to your yarn but will not take away from your color design. What I am saying is don't stress the small stuff! Your design will reveal itself consistently in your project, even with small differences throughout.

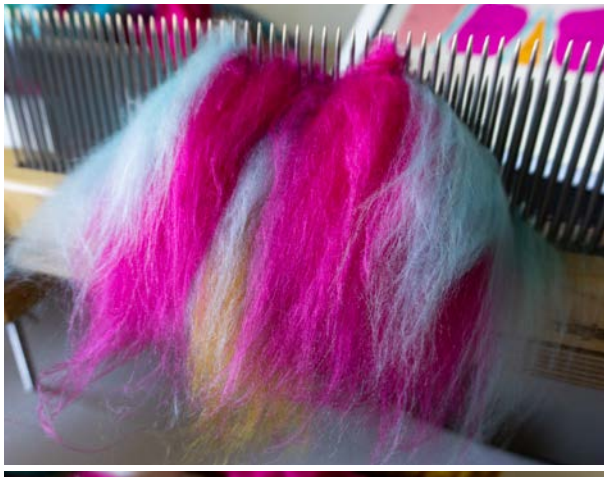
THREE HACKLE PATTERNS

All of the sample colorways and swatches shown here were created from the same colors, so it is easy to see how much variation is possible when changing the proportion of the main color. The placement of these colors varied the overall pattern design, too, either by creating flecks and quick color changes, or solid blocks and marling.

Following a hackle pattern means I can create color repeats and blends for an entire project. I can also replicate that same color blend years later or easily replace one or more of the colors.

MAKE IT YOUR OWN

I hope these examples have opened up a new world of yarn design and color creation for you! This system is easy to use and has endless possibilities; you will soon be creating unique yarns with your own personal flair, and you will be able to repeat them easily or even share the pattern with your fiber friends.

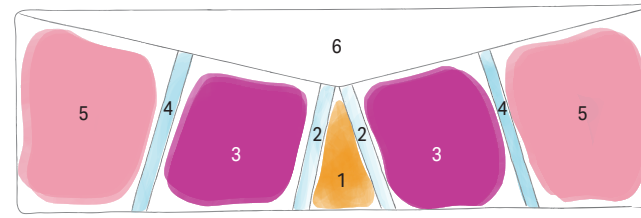


The Pink Sample

Pink Sample

The first pattern uses pink and fuchsia as the dominant colors of the palette. I have noted my loading sequence, starting with number 1 as the first color to go onto the hackle. Loading does not always go from end to end, nor does it always go from the base layer to the top! You can also see the design on the back of the loaded hackle, and this is a good way to check that you have replicated the pattern well.

Notice how the design in the swatch reflects the pattern well, with pale pink at the ends and gold through the middle. In a larger design, this will create a fabric that has the gold self-striping regularly, and the two pinks will move in and out around it. The touches of blue will create little color pops in between. If you "read" the knitted fabric from the ribbed end to the bind-off end, you can see the shapes of the pattern as it starts with the pinks and has the small blue stripes on either side of the gold peak. The white flecks throughout the entire swatch lighten it.



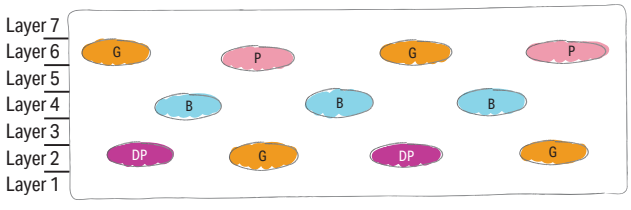
Loading

1. Gold Center Triangle
2. Blue either side of Gold
3. Dark Pink
4. Blue
5. Pink
6. White

White Sample

This is a really fun and easy one. While it seems like it should be simple to replicate without a pattern at all, it can actually be really helpful to have a pattern. If you want to repeat it at a later date, you will know the colors, quantities, and placement. It would otherwise be easy to forget! The pattern also lets you stay in control of the proportions; you will always know you have enough white to remain the dominant color.

The resulting combed top and swatches show that the colors are placed evenly without pooling and create a gentle colorplay throughout the fabric. The blue added to a single layer makes a recurring pattern between the gold and pinks. The drafting done while spinning ensures a good blend without losing the design.



Loading
Layer 1= White
Layer 2= White + color dots
Layer 3= White
Layer 4= White + color dots
Layer 5= White
Layer 6= White + color dots
Layer 7= White

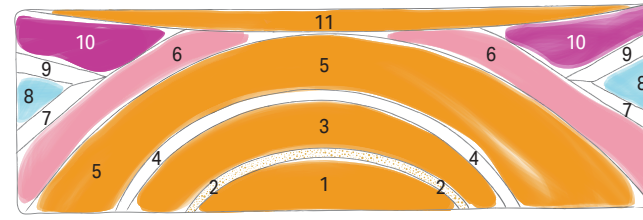
If you have not used a hackle and diz before (or not in this way), you can find a free demonstration video on Suzy's website (fiberygoodness.com) along with a complete workbook on creating and using hackle patterns.

The White Sample

The Gold Sample

Gold Sample

It is always useful to see if there is much difference between two-ply and chain-plied swatches. Usually, the main thing you will notice is that the colors appear more solid and compact in the chain-ply. Sometimes, depending on how evenly you spin your singles, you may get additional marling between colors in the two-ply, which can be very pretty!



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1. Gold center
2. Angelina
3. Gold
4. White
5. Gold
6. Pink (all)
7. White-1st line
8. Blue
9. White-2nd line
10. Dark Pink
11. Gold

Resources

Fibre2go, fibre2go.co.nz
Majacraft, majacraft.co.nz

Suzy Brown has a passion for yarn-spinning experimentation and fiber prep. She is a curiosity-driven fiber artist who has been spinning and preparing fibers for over 20 years. Suzy has taught workshops in Europe, the United States, Australia, and her home country of New Zealand, and she also shares her knowledge through online courses at fiberygoodness .com. She is currently teaching the correspondence course Designer Yarns for the Creative Fibre New Zealand guild as well as running her own digital magazine for inspired fiber artists, *tinyStudio Creative Life*.

Handpainting Fiber

Exploring Food and Drink Dyes

BY SUKRITA MAHON

Sukrita shows us what dyes from your local grocery store can do. Handpainted tops dyed with Kool-Aid (*top two*) and Wilton's colors (*bottom four*).

Photos by Sukrita Mahon

The spinning world is full of alluring hand-dyed tops and rovings, available in almost every color combination imaginable. They are satisfying to spin and then knit or weave, and it's hard to imagine that they would ever fall out of favor with spinners. That said, learning to dye and handpaint wool can feel intimidating at first. Many spinners might be worried about getting started; they may lack a dedicated dye area and equipment, they are on a budget, or a variety of other reasons.

Some spinners get their feet wet using food and drink dyes, and I'd like to show you how to explore handpainting braids at home using these low-cost and accessible dyes. They're food grade, so the fiber can be dyed in the microwave using items you might already have in your kitchen. The chemistry of food dyes is similar to that of professional-grade acid dyes used on protein fibers. This means that the resulting colors are bright and washfast on wool, silk, other animal fibers, and even nylon. Any misconceptions about the products discussed here producing inferior dye results can be laid to rest.

However, there are reasons that professional and aspiring dyers may not use food and drink dyes. Professional-grade fiber dyes are sold in larger quantities at lower prices for those working with large volumes of fiber. The colors available in professional dye lines are more repeatable and don't have ingredients unnecessary for dyeing fiber, such as flavorings or sweeteners.

Is Breaking Bad?

Some shades of food dyes are known to split into multiple colors when they are heated, a process called breaking. Typically, it is the purples and blacks that split into various pinks, greens, and blues. It's a surprising and, to me, unique effect that I try to take advantage of. To ensure that it happens, I don't allow the dye solution to cool down before applying it. Conversely, keeping it at a cooler temperature makes it less likely to split. I have only once managed to get a nice grayish black from food dye on handpainted fiber, so although it's rare, it is definitely possible.

Sukrita mixed five colors of dye in reused glass jars.

Dyeing fiber with food and drink dyes is undeniably fun, and I believe it can give us a greater appreciation for the work of independent dyers. This accessible entry to dyeing allows more spinners to explore color and develop their own personal colorways. My own journey into dyeing wool started with food coloring because the cost of dyeing equipment was a deterrent to me for a long time. Let's just say that my passion for dyeing only deepened, so I later transitioned to professional dyes. Get started in the way that works for you!

HOW TO SELECT COLORS

To me, the most important part of selecting colors is knowing yourself. What colors are you drawn to, and what do you find pleasing? We have strong emotional reactions to color, even if that reaction may not be fully conscious. Draw inspiration from scenes that uplift or inspire you, or those that make you feel calm. Noticing that color is all around us helps capture some abstract essence of our experiences.

I often find inspiration in nature. As I write, it's spring in Australia, so I wanted to use colors that feel representative of the new growth, clear skies, flowers, and scents. Restricting myself to four or five colors in a braid helps me when creating a palette, and I find that adding a neutral hue to brighter colors can pull the palette together.

Dyeing top is much more forgiving than dyeing yarn. Mistakes or colors that you don't like can easily be removed before spinning by simply splitting the top. Bright colors can be muted by plying them with a contrasting or neutral color. There are many ways to prep a handpainted top for spinning, and they are worth exploring.

GETTING STARTED

The food dyes you choose may come in several forms. Liquid color is common, but I have found that quite a lot of color needs to be added to get good results. Cake or gel dyes are my preference as they are much more concentrated, and the color saturation can be built up fairly easily. The brands I used to create the colors shown here are Wilton's Icing Colors, a gel-based product, and Kool-Aid powders.

For the beginning dyer, I recommend starting with wool tops because they are less likely to felt in the microwave and are not as fussy to handle as loose

Sukrita's Dye Solutions

Gel-Type Food Dye: For the samples here, I mixed about ¼ teaspoon of gel with 7/10 cup (180 ml) of warm water to create my dye solutions. Stir until completely dissolved.

Kool-Aid: I used Kool-Aid in two ways. The first was to sprinkle the drink mix directly on my fiber, which had been wetted in a water and vinegar solution. The second method was to dissolve a packet of Kool-Aid in about 7/10 cup (180 ml) of water.

Mix the gel food dye in warm water to make the dyeing solution.

fiber. I do not recommend using superfine Merino, but medium wools, such as Corriedale, are perfect. Here I have used Texel wool tops, divided into units of 3½ ounces (100 grams). Texel is a medium-to-coarse wool similar in feel to fiber from down breeds, and it takes color very well.

What You'll Need

- Wool tops
- White vinegar (¼ cup [60 ml] for every 3½ oz [100 g] of fiber)
- Four or five containers to mix dye, such as recycled glass jars
- Stir stick, such as a butter knife or chopstick
- Warm water
- Plastic wrap, also called cling wrap
- Rubber gloves
- Microwave-safe container or bowl
- Towels for clean-up

SUKRITA'S METHOD: HANDPAINTING WITH FOOD DYES

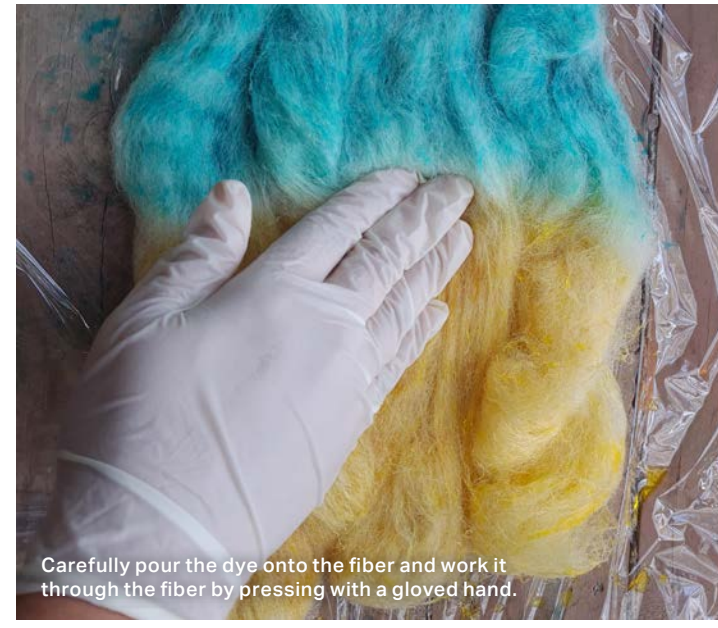
1 Fill a tub or bucket with lukewarm water and add ¼ cup (60 ml) white vinegar for every 3½ oz (100 g) of fiber. Soak the fiber, gently pushing it under the water and making sure it is submerged. Leave to soak for 45 minutes to an hour.

2 Prep the surface where you will do the handpainting. If you want to keep it clean, cover with towels or garbage bags.

3 Prepare the dye solutions. The quantity of water needed will depend on the amount of wool you want to handpaint, and the amount of dye you add will depend on the saturation you want. For example, I created five dye jars following the recipes on page 54. This set of five colors was enough to dye 7 oz (200 g) of fiber.

4 Spread enough plastic wrap onto the dyeing surface to hold 3½ oz (100 g) of fiber. Squeeze excess water out of the fiber and place it on the plastic wrap in a zigzag pattern.

Continue to add dyes, small amounts at a time, in the pattern and sequence you like. The color sections can be long or short.



Carefully pour the dye onto the fiber and work it through the fiber by pressing with a gloved hand.

5 Now you are ready to place the dye. The color sections can be as wide or as narrow as you like, but I've found that about 6" to 8" (15 to 20 cm) is optimal. The width of the sections will define how the yarn looks when knitted. For instance, about 6" (15 cm) of each color placement is likely to form a fairly good self-striping sock yarn if spun straight from the top and chain-plied.

Some people use syringes or squeezable ketchup bottles to dispense the dye. While these tools do offer more control, they're not required. You can pour on

Once the dye is applied, the fiber is rolled up in plastic wrap.

a small amount of dye and gently press with a gloved hand to saturate the fiber (see page 55). Make sure that the dye has gone all the way through to the other side of the fiber.

6 Roll up the fiber in the plastic wrap and place it in the microwave, heating for 2 minutes at a time, for about 6 to 8 minutes total. The heat from the microwave sets the dye.

7 Remove the fiber roll from the microwave carefully, and let it cool before removing the plastic. Handling the fiber too much at this stage can cause it to felt.

8 Once the fiber has cooled completely, remove the plastic wrap and transfer the fiber to a sink or tub to wash. It should be washed in the same way as a wool garment: with mild detergent and lukewarm water. Rinse until the water runs clear. Gently squeeze the fiber to ensure that there is no excess dye left. Minimal color bleeding is an indication that the dye was properly set.

Hang to dry, and the fiber is ready to spin.

Other Handpainted Effects

Dry Kool-Aid powders can be sprinkled directly from the packet onto fiber that has been soaked in the water and vinegar solution to achieve a mottled dye effect. When spun, the yarn has a subtle marled look, with the white portions softening the bright reds. I have also used Kool-Aid to create a braid with a long gradient by dissolving the Kool-Aid powder in water and vinegar and painting it in long transitions. The colors are subtle and make a beautiful pastel yarn.

Sukrita Mahon is a spinner and dyer living in New South Wales, Australia. She is obsessed with sourdough baking, slow and mindful living, and all things wool. You can find her on instagram @su.krita or on Etsy at Webspun Wares.

Kool-Aid sprinkled directly onto fiber wetted in the water-and-vinegar solution will yield a mottled, speckled effect.

Make just one of Madeline's cheerful miniature sweaters, and you won't be able to stop.

Photos by Matt Graves

Pacing Pullovers

Small Sweaters for Hard Times

MADELINE KELLER-KING

As I'm writing this, the world is grappling with a pandemic, and many of us are facing some form of adversity, wondering what normal may look like in the future. If there's anything 2020 has taught us, it's that no one is immune to uncertainty and the upsets it can bring to our personal routines and habits.

I was diagnosed with a chronic pain condition in 2019, and what followed was the unplanned restructuring of my entire life. I know I'm not alone in this; things happen in our lives and send us searching for a new normal. A concept frequently taught to those of us living with chronic conditions is pacing. It's a reminder to take things slowly and mindfully in order to keep ourselves from overexertion or a flare-up of symptoms. Our energy is finite and influenced by things outside our own control. More stress = less energy.

As my chronic condition has taught me—and the pandemic has taught all of us—sometimes we are all fragile in our own way, and pacing can be a helpful practice for all of us. Even our making is impacted by stress, and yet it's in such times that we need our making the most. However, if you're anything like me, it is in times of difficulty that seeing a project through to the end can feel the most daunting. Life's complications can make the creative process feel overwhelming, but there is something particularly satisfying about a freshly finished project.

In the beginning of my own journey, I would push myself out of frustration, railing against my own body, only ever managing to make things worse: a project ruined through carelessness, pots of dye dropped or forgotten, or myself stuck in bed for days as the result of my own actions. Learning my limits has been an ever-changing road, and chronic pain has forced me to occasionally slow down. I learned to compromise and adapt. If I couldn't bend and lift pots of water to wash or dye wool with, I carded. If I couldn't card, I spun. If I couldn't treadle, I tried to knit. On the days when I had to stay in bed and my hands couldn't take the weight of a heavier project, I would work on something small. Some days, I am not able to craft for very long, but even so, I still find ways to do this work that I love.

No matter the reason, be it physical illness, emotional burnout, or even grief, the truth is that we don't always have the energy or ability to tackle a large project. When spinning for a full-sized sweater isn't an option, I've found it equally satisfying to work on a really small one. In fact, there have been studies showing that our brains react in the same way to completing a small task as they do for a large one.

This project is a spinner's study in pacing and is designed to be completed in manageable increments as time, pain, and energy levels allow. I started making

The size of Madeline's sweaters may be mere inches, but their charm is immeasurable.

these miniature sweaters using leftover bits of sock yarn, but once I made one, I just couldn't stop! Not only are they cute, they knit up quickly. Weighing in at around 0.07 ounces (2 grams) per sweater, they don't take much fiber, yarn, or time.

SPINNING NOTES

I did everything I could to make this project easy for myself, including using a bright and cheerful ready-to-spin braid of Merino top instead of working from fleece I prepared myself. This fiber is from Three Waters Farm in the colorway Playful.

I broke up the braid for spinning in two ways: First, I split half of the fiber lengthwise into about 16 strips, to keep the color repeats for a self-striping yarn. Next, I pulled apart the other half into chunks by color and spun it into solid-colored yarns for colorwork. In each case, I took the time to predraft the fiber, which gave me a chance to get familiar with the wool and its staple length and made the spinning process less work for my hands. And for my solid colors, predrafting made it easier for me to remove any of the staple lengths with two different colors on them and thus avoid muddying the color of my finished yarn.

Colorful hand-dyed fiber from Three Waters Farm makes beginning the spinning for the miniature sweaters easy—no fiber processing!

Aiming for a three-ply yarn in the laceweight to light fingering-weight range, I spun the fiber with a worsted-style, short-forward draft at a fairly fast speed on my Electric Eel Wheel Nano. This wheel has been an instrumental tool for me on days when I really want to spin but treadling is a bit too much for me, and this e-spinner has become my go-to wheel for sock-weight spins. I find it works best for finer spinning with its small size and bobbins suitable for holding about an ounce of fiber. Also, instead of spinning all of my singles at once, I chain-plied after each color, resulting in a number of three-ply, fingering-weight mini skeins. For the self-striping yarn, I spun the strips of fiber one after the other, but I took breaks between each one and plied the larger skein when I was feeling up to it, maintaining the color repeat from the original braid.

I finished my yarns with a warm-water soak, gently squeezed out the water, and finished with a quick snap before hanging them to dry to set the twist.

Resources
Three Waters Farm, threewatersfarm.com

MATERIALS

Fiber 4 oz Three Waters Farm Merino top in Playful.
Yarn Chain ply; 15 yd; 2,729 ypp; 25 wpi; laceweight.
Needles Size 1 (2.25 mm) (see Notes). Adjust needle size if necessary to obtain the correct gauge.
Notions Marker (m); stitch holders (see Notes); tapestry needle.
Gauge 44 sts and 58 rnds = 4" in St st.
Finished Size 1½" body width, 3½" from cuff to cuff, 2" tall.

Visit spinoffmagazine.com/spin-off-abbreviations for terms you don't know.

Notes

- This mini sweater is worked in the round from the top down. The pattern is written for two colors (main color [MC] and contrasting color [CC]), but one color may be used throughout.
- Use the needles that you prefer for working a small circumference in the round: double-pointed, two circulars, or one long circular for Magic Loop.
- Safety pins or waste yarn work well as stitch holders for this project.

YOKE

With MC, CO 14 sts. Place marker (pm) and join in the rnd.

Rnds 1–3 *K1, p1; rep from * to end.

Rnd 4 *K1f&b, k1, [k1f&b] 2 times, k2, k1f&b; rep from * once more—22 sts.

Rnd 5 Knit.

Rnd 6 *K1f&b, k3, [k1f&b] 2 times, k4, k1f&b; rep from * once more—30 sts.

Rnd 7 Knit.

Join CC.

Rnd 8 With CC, *k1f&b, k5, [k1f&b] 2 times, k6, k1f&b; rep from * once more—38 sts.

Rnd 9 *K1 with CC, k1 with MC; rep from * to end.

Rnd 10 With CC, *k1f&b, k7, [k1f&b] 2 times, k8, k1f&b; rep from * once more—46 sts.

Change to MC.

Rnd 11 Knit.

Rnd 12 *K1f&b, k9, [k1f&b] 2 times, k10, k1f&b; rep from * once more—54 sts.

Rnd 13 Knit.

Rnd 14 With CC, *k1f&b, k11, [k1f&b] 2 times, k12, k1f&b; rep from * once more—62 sts.

Rnd 15 *K1 with CC, k1 with MC; rep from * to end.

Rnd 16 *Place 15 sts on holder, k16 with CC; rep from * to end—32 sts rem for body.

Break CC.

BODY

Rnds 1–11 With MC, knit.

Rnds 12–14 *K1, p1; rep from * to end.

BO all sts in patt.

SLEEVES

Return 15 held sts to needle and, with RS facing, rejoin CC. Pm and join in the rnd.

Rnd 1 K15, pick up and knit 1 st at underarm—16 sts total.

Rnds 2–11 Knit.

Rnds 12–14 *K1, p1; rep from * to end.

BO all sts in patt.

FINISHING

Weave in ends. Block if desired.

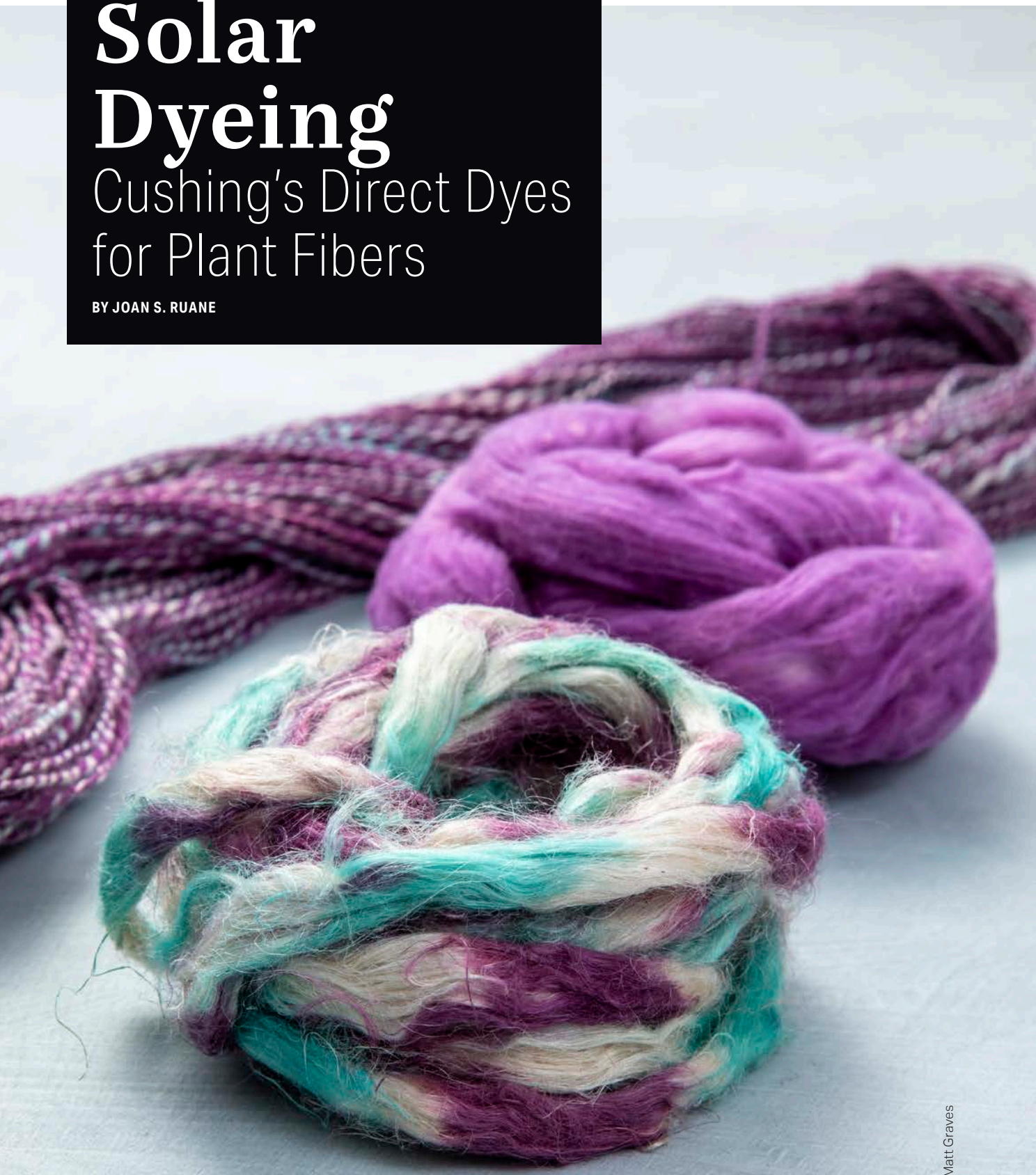
Madeline Keller-King is an avid fiber artist and natural dyer living in the woods of northwestern Montana. You can find her work and adorable canine assistants on Instagram @woolywitchofthewest.

Make a palm-sized sweater this spring's take-along spinning and knitting project.

Solar Dyeing

Cushing's Direct Dyes for Plant Fibers

BY JOAN S. RUANE



From front: handpainted hemp, immersion-dyed cotton sliver, and a lovely skein of these two fibers plied together.

Photo by Matt Graves

As spring arrives and new green leaves begin to pop out on the trees, flowers are poking their heads out of the ground and the sun starts rising earlier each morning. What a wonderful time to be outdoors among spring plants while solar dyeing plant fibers for spinning. Add water, reagents, and fiber or yarn to a jar and set it in the sun. Then it's time to go in and have a nice breakfast while the sun does the work for you.

One of the most rewarding solar-dyeing experiences began one day last spring as I was spinning with a couple of friends on a neighbor's patio, sitting six feet apart. Lynn handed me several skeins of handspun cotton yarn. Someone had given the yarn to her several years before; it was definitely a beginner's attempt to spin cotton, but the yarn was stable. After I insisted several times that Lynn keep the yarn, she said she needed someone to adopt the yarn who would put it to good use. Appreciating the effort and frustration that must have gone into making that yarn, I knew I had to create something from it. It was lumpy and bumpy and tied with knots in many places. The yarn was spun from several different batches of cotton, and each skein was a different white color.

I held back the whitest skein to use as accent and added two skeins to a green dyebath. Sitting in our Arizona sun, it took only two hours to give me a nice warm green, but due to the different types of cotton, I got two different shades of green. The third skein I submerged into the same jar with the leftover dye. The next morning, this last skein was yet another shade of green. I wet-finished the yarn and waited until it was fully dry before heading to my weaving room. I was so pleased with the result that I quickly wove off a lovely scarf.

Photo by Matt Graves

Joan was able to dye several spring greens on cotton with a little work and a little love.

The nice thing about this solar-dyeing method for plant fibers is that it does not have to be a technical or scientific project. The following instructions can be tinkered with; they are a basic recipe that you can add to or subtract from. This approach is not for professional dyers who want to get precision-dyed fiber consistently. No, it is for those of us who want to have fun and play with colors.

THE DYES

For years, I used dyes that required sodium carbonate, a lot of salt, and many gallons of rinse water to create colorful plant fibers and yarns that would not bleed. Living in Arizona where water is precious, it always bothered me to waste so much water.

When Sara at Red Stone Glen in Pennsylvania asked me to teach a workshop, she also asked if I would teach students to use the dyes they carry made by W. Cushing & Co. "But that's a union dye,"* I said. Sara corrected me, explaining that Cushing had a direct dye for cellulose fibers and an acid dye for protein fibers, and she sent me a couple jars of direct dye to try. To my amazement, the dye process was easy and only took a little salt in addition to the dye, and when I rinsed the dyed fiber, it didn't bleed! I was sold and have used only Cushing's Direct Dyes ever since for my plant fibers and yarns.

As with any type of dye, you discover shortcuts, recipes, and tolerances through experience and practice. I share my method here for solar dyeing.

GETTING STARTED

First, you will need to gather some equipment and prepare your plant fibers and yarns. Cotton must be scoured in order to dye consistently as it has oil and

If you want even, brilliant colors, cotton should be scoured prior to dyeing.

Photos by Joan Ruane unless otherwise noted

waxes that protect the fiber. This protective layer inhibits dye absorption, but it can be removed by simmering the cotton in water with a little detergent, such as Dawn. Hemp, flax, and most other plant fibers do not need to be scoured before dyeing because their fiber was previously protected by parts of the plant that have already been stripped away.

Scouring Cotton

1 I choose to work with only 2 ounces of fiber or yarn at a time when dyeing. Place about 2 ounces of fiber in a net laundry bag. If working with yarn, make sure the skein is tied loosely in four places.

2 Fill the pot about half full of water, place on the stove, and bring to a simmer. Add the detergent, stir, and add the fiber or yarn, gently poking it below the surface.

3 After simmering the fiber for 15 to 20 minutes, drain the water and rinse with clean water to remove any detergent. The scoured fiber is ready to dye.

Equipment

Scouring: Net laundry bag to keep unspun fiber contained; enamel or stainless steel pot; heat source; stir spoon; detergent, such as Dawn; and pot holders if needed.

Dyeing: Enamel or stainless steel pot with steamer rack; large stir spoons; measuring cups and spoons; rinse bucket; mask and rubber gloves. You will also need water, salt, Cushing's Direct Dyes for cellulose fibers, and 2-ounce increments of plant fiber (scoured if cotton).

Solar Dyeing Only: Dyeing containers. (I use large plastic dog-biscuit containers, but gallon-sized glass jars are preferable.)

Handpainting Only: Dye-safe surface covered in newspaper or paper towels; several small wide-mouthed jars; and sponge paintbrushes.

Equipment for solar dyeing.

Note: Equipment used for dyeing should never be used for food preparation. Wear a mask whenever handling dye in powder form.

JOAN'S BASIC SOLAR-DYEING METHOD FOR PLANT FIBERS

1 Mix ¼ teaspoon of Cushing's Direct Dye powder into about ½ cup of very hot water; stir until dissolved. Fill the gallon jar one-half to three-quarters full of water, add 1 teaspoon of uniodized salt, and stir to dissolve the salt. Add the dissolved dye to the jar, then put in 2 ounces of fiber.

2 Sometimes the fiber will take up the dye immediately, and at other times, it will take all day in the sun to get the color you desire. Remove the fiber with gloved hands as soon as it is the color you want and squeeze the excess dye solution back into the jar. You can continue adding and removing fiber until the dyebath is exhausted.

3 Fiber dyed with this Cushing product has to be heat-treated to set the dye. Place a steamer rack and a little water in a pot, lay the dyed fiber on the rack, and steam for 15 to 20 minutes.

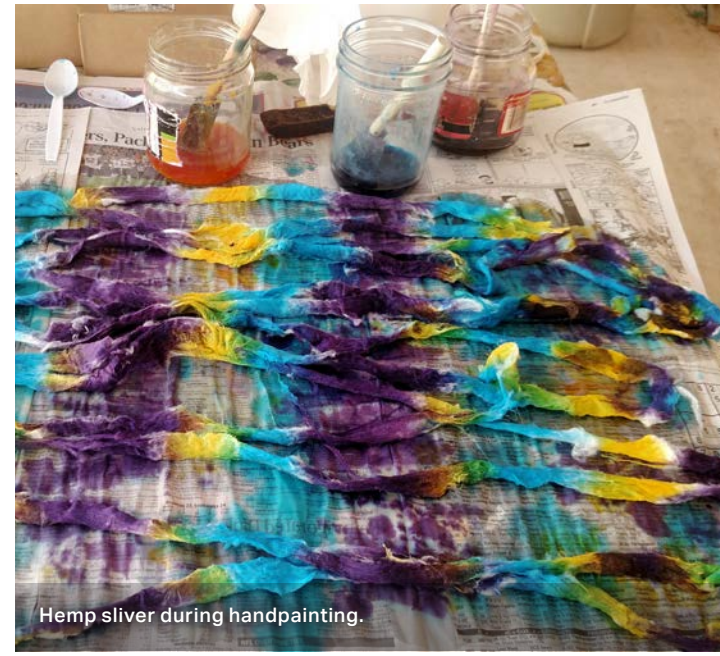
4 Fill a rinse bucket with water, add ¼ cup of salt, and stir to dissolve. Submerge the steamed fiber until is saturated, lift it out of the bucket squeezing out excess water, and lay it out or hang it to dry.

HANDPAINTED SLIVER

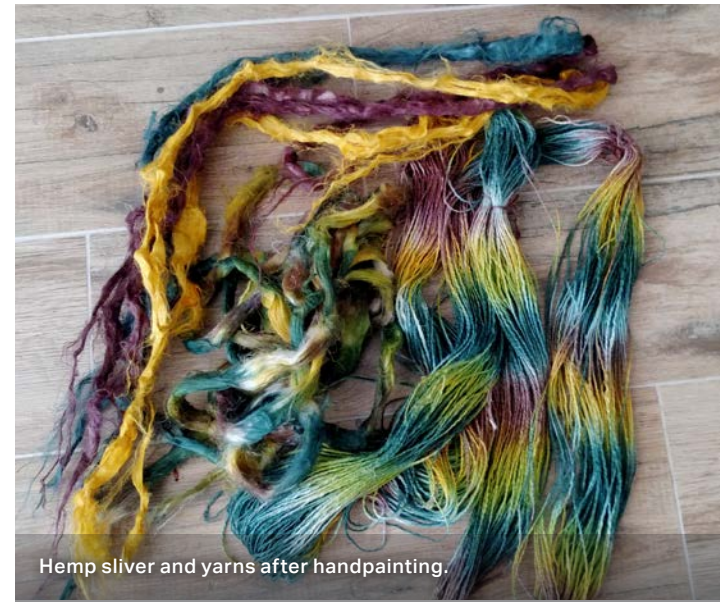
1 Scoured cotton can be hung to dry slightly, and I like painting hemp or flax dry for deeper colors. Lay out the fiber on a table covered with newspaper or paper toweling.

2 Using small widemouthed jars, mix about ¼ teaspoon of dye into ¾ cup of boiling water with ½ teaspoon of salt dissolved in the water. Repeat for each of the colors you want to use.

3 With a sponge paintbrush, apply the dye solution to the sliver, making sure it is well soaked and the dye saturates the sliver. If you want the colors to blend, then paint the colors close together, but if you want them distinctive, leave just a little space between each color.



Hemp sliver during handpainting.



Hemp sliver and yarns after handpainting.

Cotton sliver that was not scoured before dyeing. Mottled areas can make for an interesting yarn when spun. It took all day in the direct sunlight and lots of shaking to get this much color to penetrate into the cotton sliver.

Solar Notes from the Road

When teaching classes, I always learn new things and discover new tips. Necessity is the mother of invention! Here are a few things I've learned during my teaching travels about keeping solar dyeing easy.

1. To avoid scouring cotton in a pot of boiling water, place your cotton into the dye jar with the dye and salt solution, and give about two small squirts of Dawn on top of the cotton. Poke the fiber down into the solution with a large spoon. The detergent will scour the fiber well enough for the dye to penetrate the fiber.

2. In a workshop in Little Rock, Arkansas, we needed to heat-set the dyed fiber. We placed our dyed fiber into ziplock plastic bags, sealed them, and laid them in a parking lot. The warm sunshine on the asphalt created enough heat and steam to set the dye.

3. In the middle of a Tucson, Arizona, summer, I can simply hang the dyed sliver outside to heat-set the dye without steaming. This works if the outside temperature is over 100 degrees Fahrenheit.

4. When you finish painting your sliver, do not waste the dye. You can combine colors to create new ones or just pour the dye into a gallon jar with a little more salt and add fiber to it.

5. It is especially nice to dry sliver on a breezy day because it fluffs up, making it easier to spin.

6. Timing does not really matter with Cushing dye; it is very forgiving. Even if you forget and leave it in the jar overnight, no harm is done. The dye solution in the containers will last several days, so you can keep dyeing in the same jar until you exhaust all the dye and the water is clear.

7. If your fiber is immersed in the dye solution and the color is developing into a shade you do not like, you can always add another color. Just dissolve the new color in hot water with a dash of salt before adding it to the dye jar.

Joan reuses dog-biscuit containers for solar dyeing.

4 Leave the painted sliver to sit for an hour, then steam it to set the dye, and rinse in salt water (see step 4 of Joan's Basic Solar-Dyeing Method); hang to dry.

Exploring plant fibers and solar dyeing is great fun. I hope you experiment and create a method that works for you. It is pretty hard for anything to go wrong as long as you add a little salt, some love, and a lot of sunshine. ●

Notes

*From W. Cushing & Co.: "For many years Cushing's Perfection Dye was a 'union' type dye, designed to be suitable for a variety of plant, animal, and synthetic fibers. In response to the changing availability of raw materials and to increase the effectiveness and ease of use of our dyes, we reformulated them into two types: acid and direct.

"Acid dyes are suitable for wool, mohair, and nylon. Direct dyes are the better choice for cottons and cellulose materials, plus linen and rayon. Silk dyes best with one type or the other, depending on the particular characteristics of the silk."

Resources

Brookmoore Creations LLC, brookmoorecreations.com
Cotton Clouds, cottonclouds.com
Perfection Direct Dyes, W. Cushing & Co., wcushing.com

First a professional teacher and then a spinner, **Joan S. Ruane** has been teaching spinning classes around the world since 1980. Her videos can be streamed through taprootvideo.com, and you can learn more at cottonspinning.com. If you discover new ways of solar dyeing, Joan would love to hear about it at spincotton@yahoo.com!

Create a color resource notebook to explore color mixing and record your experiments.

Photos by Matt Graves unless otherwise noted

Find Your Colors!

Road Map to Repeatable Dyes

BY TERRY MATTISON

I compare fiber and yarn dyeing to cooking, and the dyes I use are like the spices in my kitchen. Some are subtle and required in larger amounts in a recipe, while others are quite spicy, packing a bold, zesty punch. Depending on what you are cooking and your personal tastes, you will choose the amount of each type of spice that is pleasing to your own personal palate. We learn to identify the spices we like, the ones we don't, and how much of each to use. Learning how to use dyes is much the same. Learn which colors make your heart sing, and chances are, you will start to understand them better when they appear in your closet, your backyard, and your fiber stash.

Wouldn't it be fabulous to formulate your own personal dye recipes to create colors that speak to you and that you can create whenever you wish? You can! It just takes a bit of practice. First you need to get to know your dyes, which is like filling your spice rack.

HOW TO GET STARTED

If you want to learn more about dyeing, I strongly encourage you to create a color-resource notebook. Creating a notebook is a project in itself, but it's not difficult. You can choose to make your notebook as simple or as complex as you like. I'll outline a series of exercises here that allows you to create watercolor-

style notebook pages and a sample skein using the same small amount of dye. Together, these samples create an invaluable resource.

Gather the following items:

- 1% stock solutions of the six Lanaset primaries*
- 1% stock solutions of the two Lanaset modifiers*
- Watercolor or mixed-media paper
- 2 sizes of syringes (10 ml and 3 ml)
- Small, short-bristled brush, such as a stencil brush
- A mini-muffin tin (a 12-muffin size works well)
- 7 glass pint jars half full of water
- 10 g sample skeins, wetted
- Vinegar or solution of citric acid‡

Mini-muffin tins are a great way to mix small amounts of dye. Terry uses one given to her by a friend that already had dye percentages marked using a Sharpie pen.

Photo by Terry Mattison

Pick Your Primaries

I created the color recipes from a set of eight Lanaset acid dyes: six primary colors and two Lanaset modifier colors (Brown B and Black 2B) used to adjust color value. The colors are shown here at 1.0 depth of shade (DOS), which is a measure of how much dye is added to the fiber. A basic scale of DOS would be: 0.1 pale pastel, 1.0 medium, and 3.0 deep. The equation is simple: weight of fiber in grams (WOF) times DOS = ml of dye (1% solution). For my 10 g fiber samples at 1.0 DOS, I used 10 ml of dye solution.

The primaries have undertones—tiny hints of their color-wheel neighbors. Knowing this and training your eyes to discern these minute differences will allow you to dial in your color recipes.

Polar Red has a blue undertone, making it slightly cool. Scarlet has a yellow undertone and is warmer. Sun Yellow has a blue undertone and is cool. Gold has a red undertone and is warmer. Blue 2R has a red undertone and is cooler than Turquoise, which has a yellow undertone and is warmer.

Note: Polar Red 390 is frequently used to supplement Lanaset and Sabraset dyes and can be purchased from Pro Chemical and Dye (see Resources).

Secondary colors, for the most part, are cheery and bright. Percentage gradations: (*from top*) Yellow to Turquoise, Gold to Turquoise, Yellow to Polar Red, Gold to Polar Red, Scarlet to Blue, and Polar Red to Blue.

Secondary Colors

A secondary color is created from two primary colors, so from our six primaries, we can create 12 secondaries. Creating percentage gradations is a fun and instructive exercise that allows you to see how these primaries interact!

We'll start by exploring an 11-step gradation using the following dye ratios: 100/0, 90/10, 80/20, 70/30, 60/40, 50/50, 40/60, 30/70, 20/80, 10/90, and 0/100. A 12-cup mini-muffin tin is perfect for mixing dye samples, and I write the ratio on each cup for reference.

SG 90/10 is a blend of 90% Scarlet and 10% Gold. I make these blends in 10 ml sample sizes, so the percentages are easily calculated in my head. SG 90/10 would consist of 9 ml Scarlet to 1 ml of Gold. Note that the first and the last are not blends but are 100% of each primary. Most of the time, I choose to skip the 70/30 and 30/70 mixtures because they are so similar to the colors on either side of them.

I don't fill the 100/0 or the 0/100 cups with dye because I already have those in my stock solution containers. So now we are looking at a seven-step gradation. Fill the seven cups as labeled, measuring out both primary colors needed and adding them to the cups in the tin.

Apply to Paper

Now you are ready to paint circles or swirls of each of these blends on your watercolor paper. I make a grid on my sheet, labeling the gradients across the top and the secondary blends down the page.

Apply to Fiber

The nearly 10 ml of each color mix can now be used to dye small sample skeins of yarn. Color is easier to see if more of the color is present; when using handspun, spin thick singles, or create at least a three-ply yarn if spinning very fine singles. The most important thing is that you choose white fiber; gray or yellowish fleece will greatly affect your final color. A fancy or special fleece is not necessary. In fact, for these samples, I used a stash fleece. It was a nice clean white but suffered from second cuts and vegetable matter—perfect for dye samples!

Secondary-Color Mixes

Scarlet/Gold (SG)	Blue/Gold (BG)	Scarlet/Blue (SB)
Scarlet/Yellow (SY)	Blue/Yellow (BY)	Scarlet/Turquoise (ST)
Polar Red/Gold (PG)	Turquoise/Gold (TG)	Polar Red/Blue (PB)
Polar Red/Yellow (PY)	Turquoise/Yellow (TY)	Polar Red/Turquoise (PT)

Use the larger syringe to extract the dye solution from each cup separately, squirting the dye into a series of glass pint jars for dyeing. Fill the jars about half full of water, add vinegar or citric acid solution, and drop in the sample skein. I then use a steamer to heat the jars and set the dye.

Dyeing all of the secondary colors and their gradations will take time. It's not a fast process, and I recommend doing one combination at a time. When you've completed all the secondary combinations along a gradient of seven steps, you will end up with 84 secondary-color and six primary-color samples along with a painted paper chart.

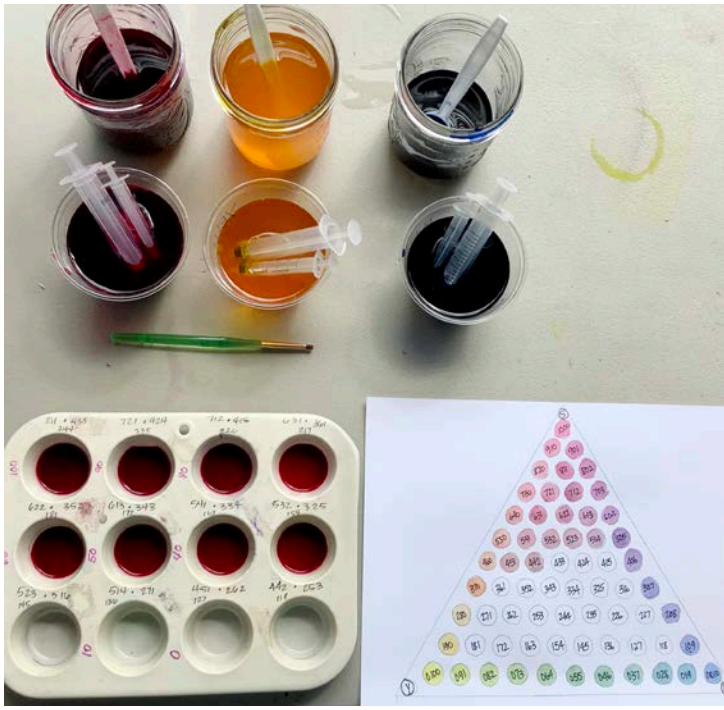
Take some time to carefully observe your results. Can you identify the "spicy" primaries? Which primaries are more subtle? If you decide to dye fiber rather than yarn, your eyes and brain will have time to observe each secondary-color gradation as you spin it.

I find it helpful to make as many notes and observations as I can. For instance, I observe that Polar Red dominates, and Scarlet is a far weaker primary red. Turquoise is the brighter of the two blues and has a yellow undertone, whereas Blue 2R has a red undertone. Spending time with your samples and making notes about your observations will help you learn to identify and use color.

Tertiary Colors

Tertiary colors are created by blending three primary colors in various amounts. These colors tend to be less bright and more nuanced and understated. They play well as the main color in a textile that uses brighter secondaries for short blasts of color. When painting samples for my notebook, I use a triangle grid to organize color mixes instead of the simple graph I use for secondaries. In each corner of the triangle, I identify the three colors I plan to mix. This allows me to see the gradations of three primaries at the same time.

A steamer is a great way to heat glass jars containing sample skeins.



Three-color mixes can be organized in muffin tins and recorded in your notebook.

Photos by Terry Mattison

Terry determined the two tertiary color mixes that would yield the yellow-green and blue-green she had in mind. The two greens informed her choice of accent colors: a divine range of rusts.

Samples

❶ 0.5 DOS + no modifier (5 ml dye per 10 g sample)
❷ 1.0 DOS + no modifier (10 ml dye per 10 g sample)
❸ 1.0 DOS + 10% brown modifier (10 ml base recipe dye + 1 ml brown for 10 g sample)
❹ 1.0 DOS + 10% black modifier (10 ml base recipe dye + 1 ml black for 10 g sample)
❺ 3.0 DOS + no modifier (30 ml dye per 10 g sample)

Note there are three secondary gradations located along the outer edge of each triangle.

Each sample or recipe is identified by three letters—acronyms of the three primary colors used—and a three-digit ratio or percentage number. Using a 10 ml sample, all three portions of primaries will add up to 10. For example, SGT 361 is a tertiary color created by blending 3 ml of Scarlet, 6 ml of Gold, and 1 ml of Turquoise. The eight main triangles are: SYB, SYT, PYB, PYT, SGB, SGT, PGB, and PGT.

Dyeing a fiber sample of each of these 288 tertiaries will create a nice set of samples for your dye book, but it can feel overwhelming. You might begin by painting triangles without dyeing a sample of each, or you could pick two or three of the mixes from each triangle for the dye samples.

TESTING TERTIARIES: FIND YOUR COLOR!

I wanted to create a handful of green colors, inspired by my front-porch view in the Pacific Northwest. I reviewed my tertiary color triangles in my notebook and created a list of possibilities. Next, I mixed the 10 ml sample of each color recipe and painted each on paper, labeling each one.

To create my palette of greens, I knew I wanted two different tertiary color recipes: a green with yellow undertones and one with blue undertones. I chose SGT 154 for my yellow-green and SGT 127 for my blue-green.

After choosing the final one or two colors, create the 10 ml of dye needed for the recipe, dye the fiber samples as before, and spin them. These are 1.0 DOS samples, and now you can try other levels of saturation: for example, 0.5 and 3.0. This means that you will use half or three times the amount of dye for the same amount of fiber. You can see that DOS can make a huge impact on the final color of your fiber!

Next, try adding modifiers to your 1.0 DOS base recipe color. Modifying with Brown will dull the color and give a slight yellow undertone. Black will also dull a color, adding a red undertone. You may find the Brown or Black was the right move, getting you closer to your target color, but perhaps this was too much or too little adjustment. From there, you can try changing the amount of modifier.

Because modifiers can overpower a color mix quickly, I use them at half strength by diluting a small amount of my 1% stock solutions with equal parts water. This reduces their strength by half, creating a 0.5% solution.

For my final samples #3 and #4 above of SGT154, I've added 1 ml Scarlet, 5 ml Gold, 4 ml Turquoise, and 1 ml Brown, or Black as noted. If you are a numbers person, you will note that adding the modifier actually changes the overall ratio of the individual dye solutions. I choose to record them with the original recipe notation (SGT154) and add the modifier to my notes. When I'm ready to use this color in a project, I can simply scale up the recipe for whatever amount of fiber or yarn I wish to dye.

Working through sample colors in this way should get you close enough to the colors you are searching for, as I did here. At first this process might seem overwhelming, but it's like learning to cook with spices: few of us create a masterpiece our first time in the kitchen.

**Following the manufacturer's instructions for mixing Lanaset powder into a liquid dye, create a solution of 1 part dye to 100 parts water. While technically this ratio equates to a 1.01% solution, it will make your dye math simple. I guarantee your eyes will not be able to tell the difference!*

‡Add 4% citric acid based on WOF or enough vinegar to lower the pH to 4.5–5.0. For a 10 g fiber sample, this would be 0.4 g of citric acid crystals. For convenience, I make a 2% citric acid solution (20 g crystals/1000 ml water). The dose of this solution for a 10 g fiber sample is 20 ml.

Resources

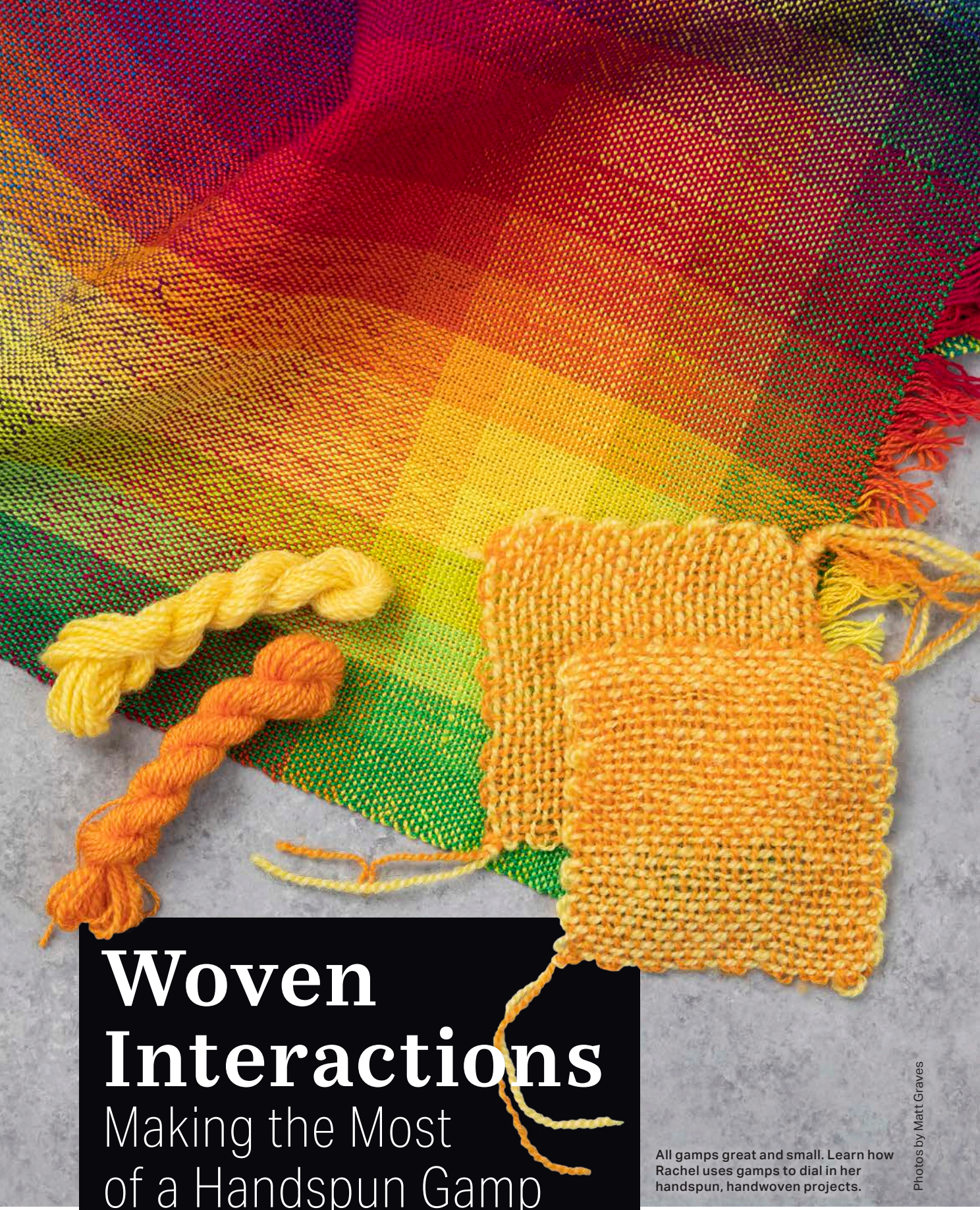
Dharma Trading, dharmatrading.com

Knutson, Linda. *Synthetic Dyes for Natural Fibers.* Loveland, Colorado: Interweave, 1986.

Menz, Deb. *Color in Spinning.* Loveland, Colorado: Interweave, 1998.

Prochem, prochemicalanddye.net

Terry Mattison learned color theory and all about undertones the hard way: through a career in the paper industry. Terry matched color on a fast-running paper machine; it was trial by fire! Now she enjoys matching color and dyeing at a more sedate pace using both synthetic and natural dyes. Find her on Ravelry and Instagram as magpiedyestudio.



Woven Interactions

Making the Most of a Handspun Gamp

BY RACHEL SIMMONS

All gamps great and small. Learn how Rachel uses gamps to dial in her handspun, handwoven projects.

Photos by Matt Graves

The siren call of color is alluring yet treacherous. In spinning, there is a fine line between beauty and mud, and finding that elusive line can be maddening. If something you have spent hours spinning followed by hours of weaving turns out to exist on the muddy side of the line, it can be heartbreaking. When more than one phase of a project is completed by hand—such as spinning for weaving—the time you invest in a project might be the costliest part of the project.

Even when a handspun yarn is brilliant and enamoring, it does not always translate well to woven cloth. However, it is not necessary for us to trudge forward blindly. With a little sampling and planning, you can make better use of that precious commodity, time, and end with a woven cloth from handspun yarn that you love.

THE COLOR GAMP & BEYOND

When you are staring at a braid of beautifully hand-dyed fiber, it is hard enough to decide what yarn to make from it, let alone what it might look like once it is woven. There are many variables that impact how the finished yarn will appear and behave when put to its end use, and the interactions of colors in a palette depend greatly on fiber character, preparation, and spinning specs such as twist and gauge. Many of us have been surprised by singles that look way different from what we expected, or taking it further, by plied yarns that look almost unrelated to the singles from whence they came. Even if handspun intended for a weaving project turns out as planned, it might not be what you expected once on the loom.

For many reasons, I believe it is a worthwhile exercise to take a small portion of your fiber and experiment. Spin, weave, and collect data. It takes a small amount of time and a few supplies to elevate your final cloth to match what you visualized, or even send you off in a better direction. However, most of us don't enjoy sampling as much as digging into a new project, so wouldn't it be great if we could create many samples all at once?

There is a specific type of sampling, known as a color gamp, that focuses on the study of color as it relates to weaving. A gamp can be a small study with just a few shades or a full rainbow of hues with hundreds of color interactions. The gamp is a design tool, and within it exists the solution to our muddy-color problems.

The idea is to create a grid of warp stripes of colors, one after the next, and then repeat the same stripe sequence in the weft. When finished, you have a square grid that contains every possible combination of warp and weft in the given color scheme you are investigating. From this sample, you can make informed design choices about the colors of warp and weft as they will appear in your final cloth.

Woolen Versus Worsted

Color gamps are an especially powerful tool when working with handspun yarns. For example, spinning with woolen versus worsted drafting techniques can create different visual effects because of differences in density and surface texture in the finished yarn. Woolen drafts tend to appear less brilliant in color because the fibers themselves have more air between them. Worsted drafts can often have a sheen as the fibers are pushed together, creating the appearance of more concentrated color in the yarn.

There are significant differences in the feel, drape, warmth, and weight of woolen- and worsted-spun yarns as well. To sample the effect of spinning method, I created a small gamp using a single colorway of Cobblestone roving, which is a lovely Bluefaced Leicester and silk blend from Neighborhood Fiber Co. (see page 76). I spun chain-plied yarns using either a worsted or semiwoolen draft to create two yarns. I could immediately see the differences in color and texture between the two small samples of yarn. I warped half of my sample with the semiwoolen yarn and the other half with the worsted. Once I had woven the cloth using the same yarns and sequence in the weft, I had a two-by-two grid with my two yarns. Visually, this sample produced a noticeable difference between the two wefts. It was difficult to see the two different warps within the cloth, but I could feel a difference; the fuzzy feeling of the cloth varied proportionately with the amount of woolen-spun fiber present. The cloth of completely worsted-spun warp

and weft was much smoother and drapier. This small sample provided four examples of warp and weft combinations, allowing me to choose my favorite and move more confidently into my project.

Value

I noticed that I was spinning a lot of colorways from various dyers that combined warm and cool colors in a wide range of values. Value refers to the relative lightness or darkness of a color. Setting aside questions of fiber type or specific hues, I wanted to sample a palette that combined warm and cool colors with strong value differences. Would a higher contrast—a greater variation in the value of the yarns—produce a more desirable result to my eye?

I spun up some fiber in blues and red/pink that represented dark, medium, and light values in my palette. One way to check the value of your colors is to simply take a black-and-white photo of the yarns. This will show the value of each color in grayscale.

This gamp was a four-by-four with the same color sequence in both warp and weft. I was surprised by my results, as is often the case when playing with colors. I did not find the higher-contrast areas as pleasing as the colors that were more matched in value. I also found that with this sett, the colors were more pronounced when the lighter value was the warp and the darker value the weft, regardless of the hue. While preferences can differ from artist to artist, the observations from this small gamp certainly informed my design as I moved forward with my chosen palette, allowing me to spin larger amounts of the colors I really wanted in my cloth.

USING A LARGER GAMP

Not every gamp you use to inform your handspun weaving needs to be 100 percent handspun. I often refer to my commercially spun gamp, even when

Rachel created a small two-by-two gamp (four blocks) using one colorway of hand-dyed fiber to test the impact of drafting technique. The color differences are subtle, but the change in surface texture and drape were significant. Fiber: Rock Creek Park Cobblestone roving (75% Bluefaced Leicester/25% silk) from Neighborhood Fiber Co.

Rachel created a handspun gamp using a palette of warm colors (pink and red) and cool colors (blues) with light, medium, and dark values. Yarn: (*from top*): Dumbledore Light and Violet Beauregard Dark (100% Bluefaced Leicester) from Essential Fiber, and Copper Circle and Georgetown Cobblestone roving (75% Bluefaced Leicester/25% silk) from Neighborhood Fiber Co.

choosing colors for a handspun project. It can be easier to purchase a large variety of colors to complete a gamp as a reference, especially if you are dealing with pure, vibrant hues. It is nice to create a reference that contains primary, secondary, and tertiary colors to see what awesome things come from the warp and weft color interactions.

My go-to commercially spun gamp is created from the 20-color kit sold by Lunatic Fringe Yarns. When I know what area of the color gamp is visually interesting to me for a design idea (such as yellows and oranges), I narrow my choices using the Lunatic Fringe gamp. Then, I make single-square samples with the handspun that matches my decision. To make a single-square sample, I use a pin loom and weave the warp/weft colors I'm interested in. Think of it as microgamping. You can really dive into a single set of colors. A pin loom does not give as much flexibility with the sett or weaving structure, but it does give a nice visual of the color relationships without having to spin more than about 10 yards of yarn.

If you plan to weave cloth from yarn you have spun, which is worthwhile and loads of fun, I encourage you to consider creating a gamp. Whether the gamp is created from your fiber or you use a commercially spun gamp to launch future exploration with handspun colors, it can save you a lot of time and frustration. Most people do not want mud, and a color gamp can save you from unforeseen muddy puddles. ●

References

Essential Fiber, essentialfiber.com

Lunatic Fringe Yarns, lunaticfringeyarns.com

Mitchell, Syne. *Inventive Weaving on a Little Loom*. North Adams, Massachusetts: Storey Publishing, 2015.

Moreno, Jillian. *Yarnitecture*. North Adams, Massachusetts: Storey Publishing, 2016.

Neighborhood Fiber Co., neighborhoodfiberco.com

Rachel Simmons loves the world of fiber. It allows her a unique and special outlet to stretch her creative muscles and find a calm space. She especially loves it when she can reach out and share with other artists. She spins, knits, and weaves while her loving family indulges her obsessions in Huntsville, Alabama.

Weaving mini gamps provides a quick way to sample color combinations. And they serve double duty as mug rugs, too.

Photos by Matt Graves

Take Two

Bite-Sized-Gamp Mug Rugs

BY RACHEL SIMMONS

The beauty of working in small, bite-sized woven samples is that it does not commit you to spinning large amounts of fiber. Our sampling time and materials can go even further by weaving a cloth of organized, intersecting stripes known as a gamp. As stripes in warp and weft intersect, a grid is created in which each square offers different information about color interaction and more. An extra bonus is that these bite-sized samples make excellent mug rugs! So weave a few extra, keep one for reference, set your hot tea on another, and offer a few to friends.

For the first mug rug, I created a six-by-six gamp. This small swatch is only about 4 inches square but effectively demonstrates warp and weft color relationships. The number of colors doesn't really matter; you can make a gamp with only two or three colors to help you sample options within a chosen palette. The second mug rug (see page 82) shows how a woolen-spun, marled yarn can be sampled in a three-by-three color gamp, using one multicolored rolag with naturally colored Merino. This gamp illustrates the use of two colors spun three different ways, which results in a subtler marled gamp with a gradual gradient grid. Both, however, can be equally useful for sampling and designing the yarns and cloth you want to create.

SPINNING NOTES

I spun the singles and made two-ply yarns on a Schacht Ladybug spinning wheel at a ratio of 8:1. I finished the yarns in a hot-water bath with mild detergent, soaking for 15 minutes, and then gently squeezed out the water and rolled the yarns in a towel. Next, I snapped the skeins by draping them across the back of my hands and quickly pulling my hands apart and then hung them to dry unweighted. The cloth for the Color Wheel Gamp was woven on an Ashford SampleIt rigid-heddle loom, and I wove the Subtle Gradient Gamp on a 15-inch Schacht Cricket rigid-heddle loom.

Color Wheel Gamp

For the first gamp, I chose to sample from SweetGeorgia's Spectra Spinning Colour Six-Pack, which contains 1 ounce each of six colors, three primary and three secondary colors. The range of colors allows this gamp to show off even tertiary color relationships through optical blending. If you think of plain weave as a collection of colored pixels, the smaller the pixels, the more your eye naturally blends them together. Basically, this means that you could potentially spin two colors of yarn but give the impression of a third color in your weaving.

To optimize the information available through this gamp and achieve the look of small "pixels," I spun a fine fingering-weight yarn and wove with a

The simplest gamp is a plain-weave color gamp. The warp consists of a stripe sequence of different colors, the same number of threads in each color. The same color order and number of threads are then used in the weft. The result is a cloth with woven squares showing every possible two-color blend of the colors used in the gamp.

— Madelyn van der Hoogt, "The Draft: What is a Gamp?" handwovenmagazine.com/the-draft-what-is-a-gamp

close sett of 16 ends per inch (epi) to take advantage of optical-blending properties. I also used a worsted-style draft to create lustrous, brilliant versions of the pack's colors. In the finished gamps, I was excited to see the fiber's iridescent properties show up in some of the color combinations. While not planned, this is a great example of how a color gamp exposes the possibilities in your designs as shown by varying warp and weft. Often, colors that are analogous (color wheel neighbors), yet still distinguishable from one another, can create the necessary contrast for this kind of color-shifting illusion.

Subtle Gradient Gamp

For the second gamp, I explored the potential of marled yarns. I plied a particularly beautiful rolag from Fellview Fibres in a colorway called End of Summer with itself and with white Merino. For more contrast in the marled yarns, I added a solid white element to see how it would look in the woven cloth.

Because I was using preblended rolags, I chose to use long draw (a woolen-style draft with a supported long-backward draft). The singles of white Merino were spun from the fold and used in both the solid white and the End of Summer/white marl. However, my woolen draft is not nearly as consistent as my worsted draft, which I knew going into the project, so I allowed for a sett that would accommodate the fluctuations in gauge that my yarns would inevitably have. I chose to weave these marled-gamp rugs at 10 epi based on the 12 wraps per inch (wpi) of my thickest yarn spun, the solid white Merino yarn. To accommodate my thinnest yarn, End of Summer/End of Summer marl at 18 wpi, I used a soft beat when weaving so that I would not create a completely weft-faced cloth. The warp and weft must both be visible for the relationships in the colors to be seen.

The result was beautiful, with the gamp itself being a tiny work of art. The differences in the End of Summer/End of Summer marl and End of Summer/white marl were so subtle that the shifts between the two were barely visible but gave a very pleasing feeling of harmony. The End of Summer/End of Summer marl can be seen more prominently when woven with the solid white yarn, and the woven combination of the End of Summer/white marl with the white yarn formed playful flecks of color.

Rachel spun six yarns, three primary and three secondary colors, for her first gamp. *Top to bottom:* Glacier, Melon, Lemon Curd, Dutch, Orchid, and Juicebox.

Resources

Fellview Fibres, fellviewfibres.co.uk

Finishing and Hemstitching, handwovenmagazine.com/finishing-and-hemstitching/

Irwin, Bobbie. "Iridescence in Weaving." *Easy Weaving with Little Looms,* 2020, 56–59.

Mitchell, Syne. *Inventive Weaving on a Little Loom.* North Adams, Massachusetts: Storey Publishing, 2015.

SweetGeorgia, sweetgeorgiayarns.com

Color Wheel Gamp

PROJECT NOTES

STRUCTURE
Plain weave.

EQUIPMENT
Rigid-heddle loom, 5" weaving width; 15-dent reed (or two 7.5-dent reeds); 1 shuttle.

FIBER
6 oz SweetGeorgia Spectra Spinning Colour Six-Pack, superwash Bluefaced Leicester in Glacier, Melon, Lemon Curd, Dutch, Orchid, and Juicebox.

YARNS
Warp and Weft: 2-ply, 20 wpi, about 2,000 ypp, 28 yd each of Glacier, Melon, Lemon Curd, Dutch, Orchid, and Juicebox.

WARP LENGTH
72 ends 1 yd long (allows 2½" for take-up, 12" for loom waste; loom waste includes fringe) for three coasters.

SETTS
Warp: 15 epi (1/dent in a 15-dent reed).
Weft: 20 ppi.

DIMENSIONS
Width in the reed: 4 12/15".
Woven length: (measured under tension on the loom) 21½" (4½" each coaster plus interstitial fringe).
Finished size: (after washing) three coasters 4" × 4½" with additional ¾" fringe.

1 Wind a warp of 72 ends 1 yd long following the warp color order in Figure 1. Warp the loom using your preferred method maintaining the color order from Figure 1.

2 Centering for a weaving width of 4 12/15", sley 1 per dent in a 15-dent reed. (*Note:* Not all rigid-heddle looms have 15-dent reeds commercially available. You can achieve 15 epi using two 7.5-dent reeds or you can modify the pattern by sleying 2 ends per dent in an 7.5-dent reed.)

3 Wind a bobbin with about 4 yd of Juicebox. Leaving at least 2" for fringe, spread the warp with scrap yarn.

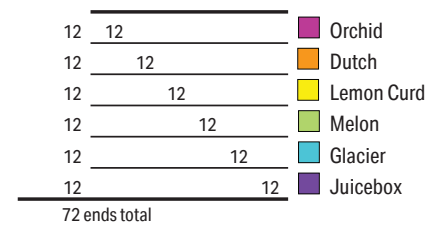
4 Leaving a tail 1 yd long for hemstitching, begin to weave in plain weave for ¾". Break thread and, after winding about 3 yd of Glacier, continue with plain weave. Use the tail to hemstitch in groups of 2 warp ends.

5 Continue weaving, switching colors every ¾" in the same sequence as the warp order until you have completed all six colors. End with hemstitching using Orchid. (See Resources for more on hemstitching.)

6 Leaving at least 4" between the coasters, begin the next coaster on your warp by preparing your shuttle with about 4 yd of Juicebox. Repeat steps 3–5.

7 Follow steps 3–5 once more. Leaving at least 2 inches of warp on either end, cut the fabric from the loom. Cut between each gamp, leaving 2 inches on either side of your cut to tie for fringe. Tie fringe in small bundles. Wet-finish in warm water by gently agitating and then leaving the gamp to soak for 15 minutes. Lay flat to dry. Once dry, trim the fringe to ¾" on each end of the gamp/mug rug.

Figure 1



Subtle Gradient Gamp

PROJECT NOTES

STRUCTURE
Plain weave.

EQUIPMENT
Rigid-heddle loom, 5" weaving width; 10-dent reed; 1 shuttle.

FIBER
100 g Fellview Fibres End of Summer (hand-dyed Merino, light gray baby alpaca, and white baby llama); ½ oz 100% Merino, white.

YARNS
Warp and Weft: End of Summer marl: 2-ply, 18 wpi, about 3,700 ypp, 26 yd; End of Summer/white marl: 2-ply, 15 wpi, about 2,200 ypp, 13 yd; white, 2-ply, 12 wpi, about 1,600 ypp, 26 yd.

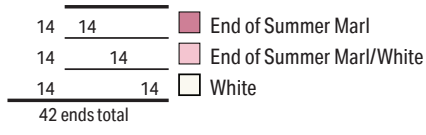
WARP LENGTH
42 ends 30" long (allows 1½" for take-up, 16" for loom waste; loom waste includes fringe) for two coasters.

SETTS
Warp: 10 epi (1/dent in a 10-dent reed).
Weft: About 17 ppi.

DIMENSIONS
Width in the reed: 4⅖".
Woven length: (measured under tension on the loom) 12½" (4¼" each coaster plus 4" interstitial fringe).
Finished size: (after washing) two coasters 3¾" × 4" with additional ¾" fringe.

1 Wind a warp of 42 ends 30" long following the warp color order in Figure 2. Warp the loom using your preferred method maintaining the color order from Figure 2.

Figure 2



2 Centering for a weaving width of 4⅖", sley 1 per dent in a 10-dent reed.

3 Wind a bobbin with about 5 yd of End of Summer marl. Leaving at least 2" for fringe, spread the warp with scrap yarn.

4 Leaving a tail 1 yd long for hemstitching, begin to weave in plain weave for 1⅘". Break thread and continue, winding about 4 yd of End of Summer/white marl, in plain weave. Use the tail to hemstitch in groups of 2 warp ends.

5 Continue weaving, changing colors every 1⅘" following the warp color order until you have completed all three colors. End with hemstitching as you did at the beginning.

6 Leaving at least 4" between the coasters, begin the next coaster on your warp by preparing your shuttle with about 5 yd of End of Summer marl. Repeat steps 3–5.

7 Follow steps 3–5 once more. Leaving at least 2 inches of warp on either end, cut the fabric from the loom. Cut between each gamp, leaving 2 inches on either side of your cut to tie for fringe. Tie fringe in small bundles. Wet-finish in warm water by gently agitating and then leaving the gamp to soak for 15 minutes. Lay flat to dry. Once dry, trim the fringe to ¾" on each end of the gamp/mug rug.

Rachel Simmons loves the world of fiber. It allows her a unique and special outlet to stretch her creative muscles and find a calm space. She especially loves when she can reach out and share with other artists. She spins, knits, and weaves while her loving family indulges her obsessions in Huntsville, Alabama.

Fellview Fibres' End of Summer rolags and a white Merino create a different style of gamp with subtle shifts in colors.

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Kate Rogovin

Hypnotherapist and Artist

Kate Rogovin enjoying time at her wheel.

Photo by Carin Swannk

Tell us about your day job.

Therapeutic hypnosis helps people break through blocks and change unwanted patterns and behaviors by tapping into the power of the subconscious mind. I'm particularly interested in how repetitive hand motions can reduce anxiety and help ease symptoms of post-traumatic stress disorder. All spinners, and makers of most things, naturally understand the trance or flow state that is utilized in both hypnosis and spinning. I am developing some workshops and programs that incorporate both to help people overcome pandemic-related fears, phobias, and anxieties.

How did you become a spinner?

I learned to spin in fourth grade when my dad, a silversmith, worked at a Colonial village. I became fascinated with weaving, earned a degree in textile/surface design from the Fashion Institute of Technology in New York, and have had several different careers in the fashion and interiors industries. Weaving became my passion, and I basically stopped spinning.

During the pandemic, I found myself needing a calming outlet for my tensions and anxieties and started spinning again. My first skeins were quite overtwisted, which I decided to observe and accept, rather than judge or fix. This led to a series of photographs of that wool yarn with one of my art pieces *Suspended Time*, which is a stopped pocket watch embedded in cement. Somehow the interaction between those subjects seemed harmonious.

Time Wrap, handspun wool with *Suspended Time*.

Artwork and photo by Kate Rogovin

Do your job and your fiber/spinning hobbies ever overlap?

There are many overlapping features between hypnosis and spinning. They both rely on the ability to relinquish and the ability to hold. Balanced tension is a goal for each process. Without tension, everything falls apart. And with too much tension, there is no flow.

How does spinning fit into the rest of your life?

I use spinning as an emotion processor. Sometimes, I spin when peaceful and calm. Other times, I spin when bored, frustrated, or angry. The year 2020 was a real challenge, and spinning helped me accept and move through and process my various emotional states. It is always soothing and calming. I like to spin at night before bed as it helps me slip into the subconscious dream world.

What is your favorite thing about spinning?

I love the rhythm and sound of spinning, as well as the softness of the fibers in my hands. Seeing my bobbin fill up gives me a sense of immediate accomplishment. I am also more connected to my memories, and my ideas seem to be more fluid when I spin.