

# QUILT YOUR CLOSET

Explore a world beyond quilting cotton



## TEXTILES 101: WEAVES & DYING

Hi, I'm Radha.

I worked in apparel and textile manufacturing for 15 years. I'm here to **share my knowledge** with you so you can feel confident turning anything into a quilt.

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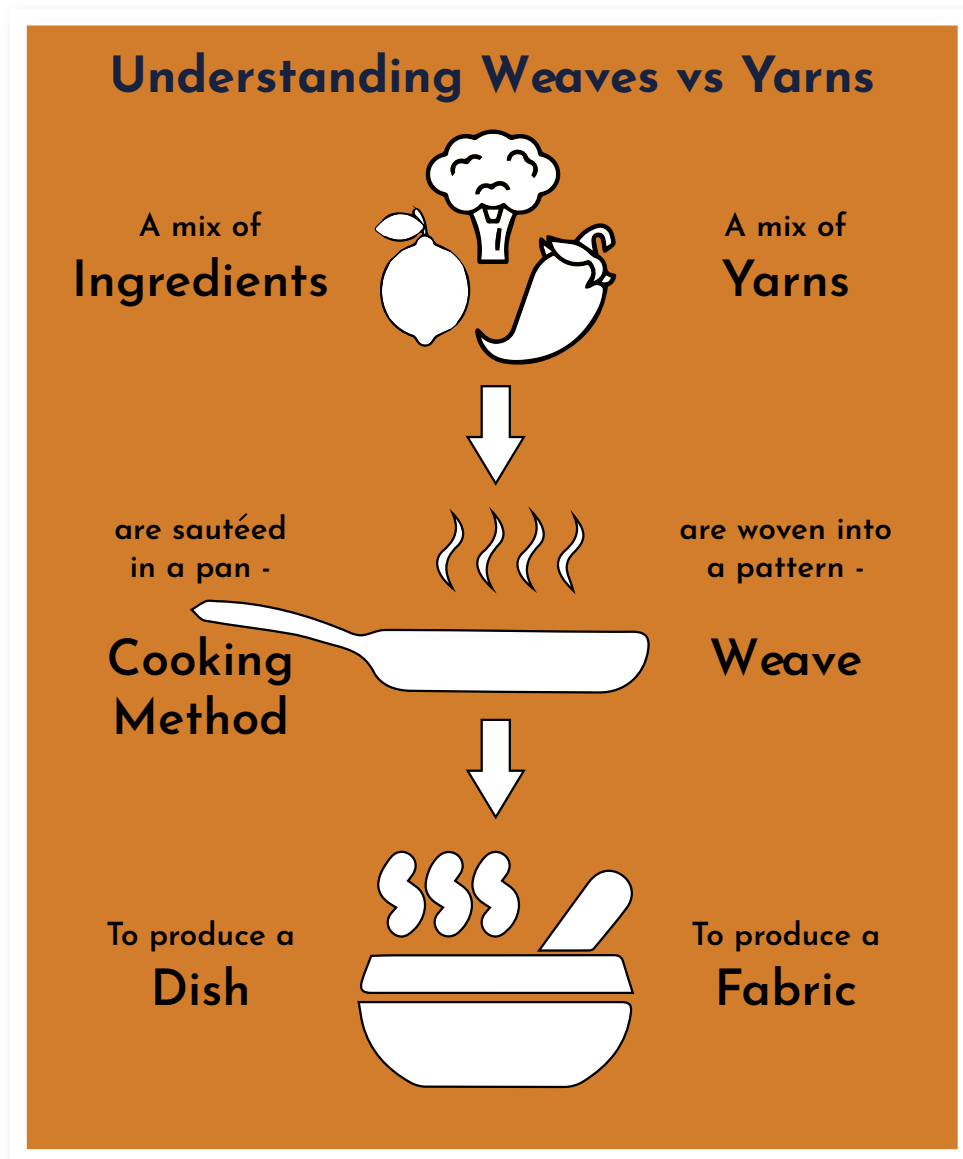
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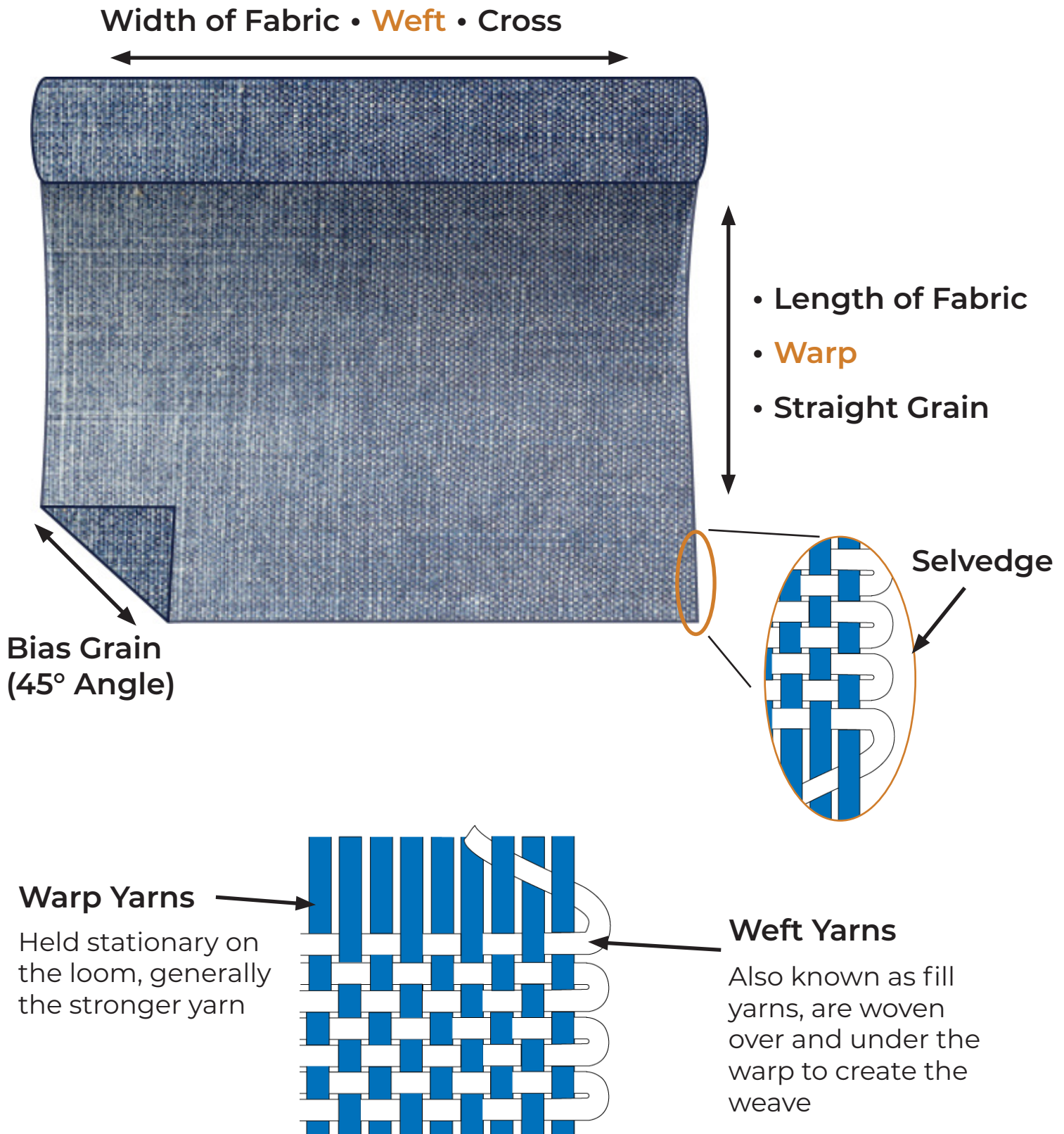
## What is a weave?

You can think of **weaves** like a cooking method and **yarn** as the ingredients — grill, sauté, boil, they all produce distinct results, but it's the ingredients that really make the difference.

$$\begin{array}{ccccc} \text{Yarns} & & \text{Weaves} & & \text{Fabric} \\ \text{(Ingredients)} & + & \text{(Cooking Methods)} & = & \text{(Dish)} \end{array}$$



## Anatomy of a fabric bolt





## *Warp & weft are grainlines...*

### **What is the grainline?**

Grainline is simply the direction the threads or yarns go in a weave. There is up and down (Warp), right to left (weft) and at a 45° angle (the dreaded bias).

### **Does it matter for quilting?**

The bias grain is the only grain that matters, most of the time, for quilting, since it naturally stretches. While the bias is useful in garment-making to go around the curvy bits, it isn't needed in flat quilts.

However, have you heard the term “warp strength”? The yarn that runs the length of the fabric (LOF) is generally the stronger yarn - it is the foundation and the most stable part of the weave. So for all those long, thin strips (narrow borders, sashing), you are going to get the least amount of wonkiness if those are cut along the LOF.

### **Why is there a selvedge?**

The Selvedge is formed when the weft yarns (right to left fill yarns) loop back on themselves as they weave through the warp (up and down length threads).

How I remember which is Warp and which is Weft:

“Right to  
Left is Weft”  
(it rhymes)

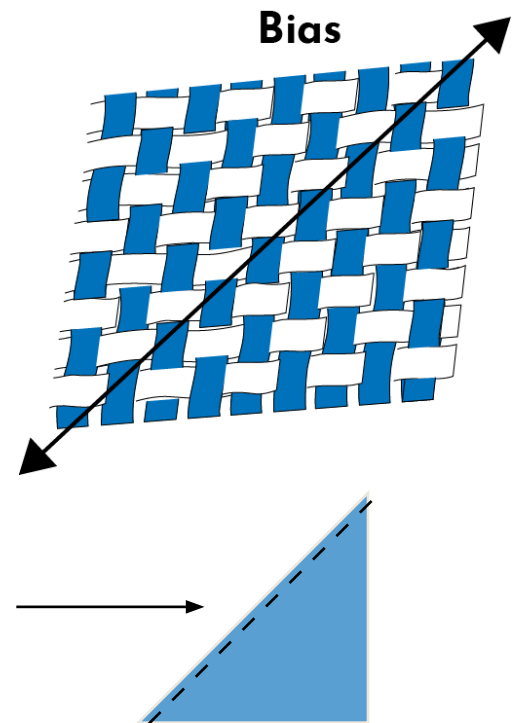
SEWING THROUGH FOG

## Grainline & stretch

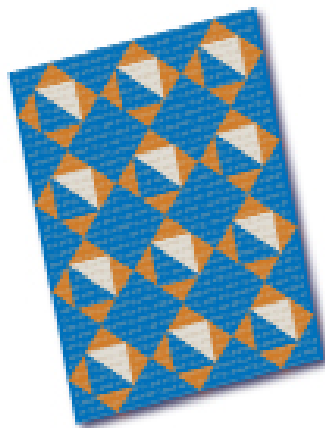
We now know that yarns go up and down (warp), and right to left (weft), creating stability.

There are no yarns that go at an angle, so the weave has nothing holding it firm, and it stretches.

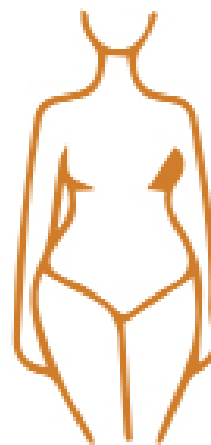
**Tip:** the easiest way to secure a bias? A simple straight stitch (sometimes called a stay stitch) along the bias edge will hold it firm as you piece it into your quilt.



Why sewists need fabric bias  
but quilters don't:



Quilts: usually  
flat rectangles



People: not usually  
flat rectangles

## Types of Weaves

**A weave itself** doesn't tell you much. A loose nubby linen, some Tana Lawn from Liberty and canvas used in a tote are all plain weaves.

Your favorite jeans and a tweed suit are both twill weaves.

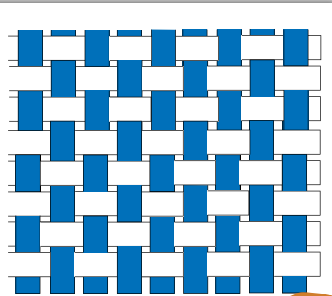
It's the spinning method, fibers, and weights of the yarns that make the difference.

### So why pay attention to weaves and which ones?

Weaves have different traits, and when you understand them it's easier to sew and quilt with them. I like to group them as I did below — even vs uneven and rank them simple to complex.

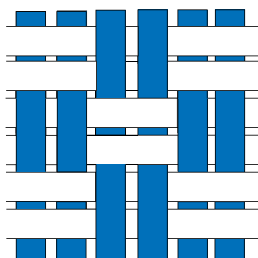
All weaves can be used in quilting. But today I'm going to focus on three that are commonly used for quilting and upcycling, and one to avoid if you are just starting out.

#### Even Weave



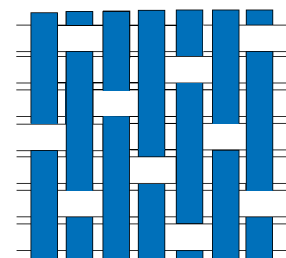
Plain Weave

#1



Basket Weave

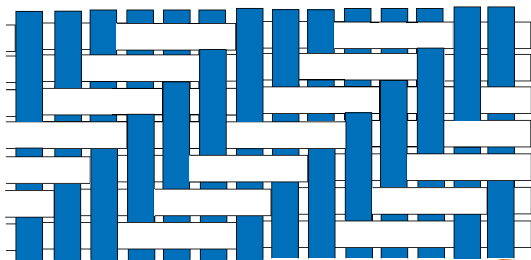
#2



Satin Weave

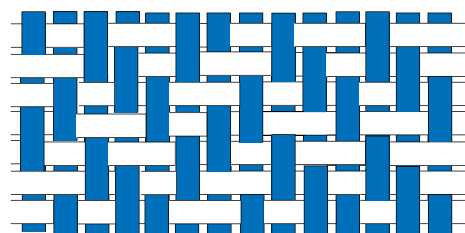
nope

#### Uneven Weave



Twill Weave

#3



Broken Twill Weave

Simple

Complex

## #1 PLAIN WEAVES

### Quilting Cotton

- Smooth, even yarns
- Tight weave
- Dyed or printed after weaving
- Mid weight (approx. 4oz)

### Chambray

#### Always

- Yarn-dyed - a colored warp yarn and white weft yarn are woven together.

#### Often

- Blue warp yarn
- Light weight (approx. 2-3 oz)
- Looser weave

### Shot Cottons

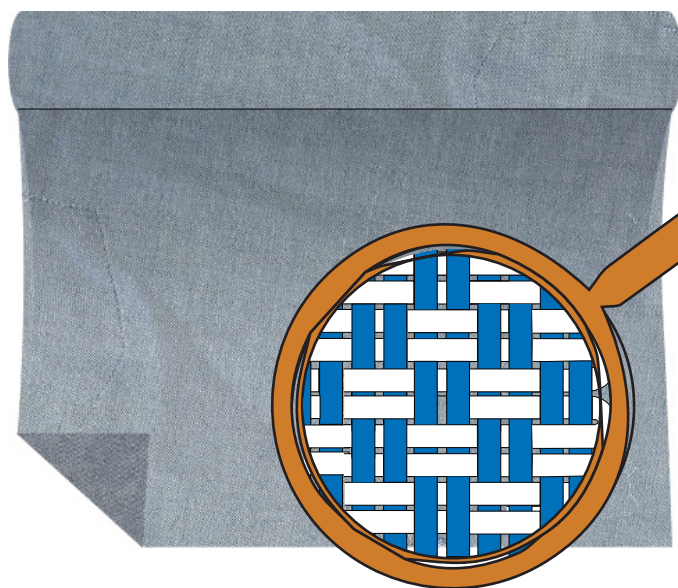
#### Always

- Yarn-dyed - contrasting warp and weft yarns woven together.
- Loose weave (= frays)

#### Often

- Mid/Light weight (approx. 3 oz)





## #2 BASKET WEAVE

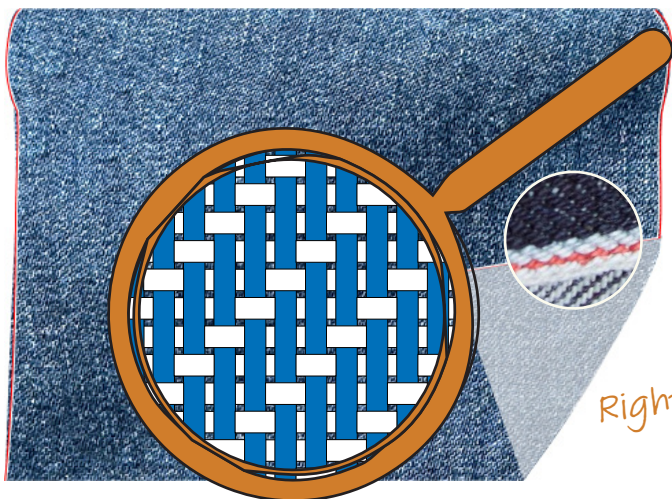
Oxford Cloth

Always

- Multiple weft threads are crossed over an equal number of warp threads creating durability

Often

- Yarn-dyed - a colored warp yarn and white weft yarn
- Mid weight (approx. 3-4 oz)
- Used for men's shirting



## #3 TWILL WEAVE

Denim

Always

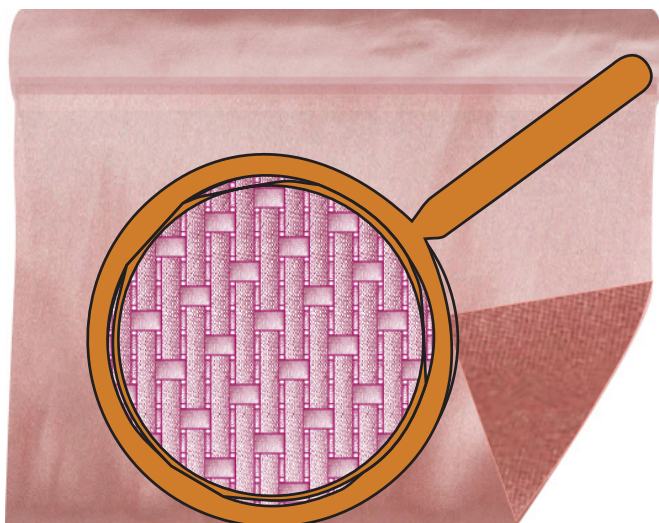
- Warp-faced fabric - the dyed warp yarns are more visible on the front (face) than the un-dyed weft

She's an Icon (the classic properties)

- 3x1 **RHT** - 3 warp threads to every 1 weft yarn, creating a diagonal down from the upper right corner
- Heavy weight (+10.5 oz)
- 100% Cotton

*Right Hand Twill*

*selvedge, woven on vintage narrow shuttle loom... I could go on and on.*



## NOPE SATIN WEAVE

Satin

- 4 or more warp yarns float over the weft yarns on the face (front)
- Smooth, glossy finish
- Very flexible with a beautiful drape which makes it very slippery and **not recommended for beginning quilters!**



*Let me clarify...*

## Why some things are “always” and some things are “often”:

Every weave I mentioned, and every fabric shown, have hundreds of variations. I shared some typical examples you might find in your closet or shopping second-hand. I included chambray and oxford cloth because men’s shirting is a great option for quilting, as is denim.

## Why I said that denim is an icon:

10 of my 15 years in the apparel and textile industry were spent focused on denim. I could write a novel just on denim weaves, weights, fibers etc... And I will be sharing more denim knowledge in the future. But for this exercise I wanted to show the most classic iteration which was the weave Levi Strauss (my former employer) used for his jeans.

The 3x1 RHT (right hand twill) is the most durable weave, and in fact for a denim to be over 10.5oz it needs to have this weave pattern. I could also write a novel on how much I love denim selvedge, but this is already getting close to 10 pages so I’ll hold off.

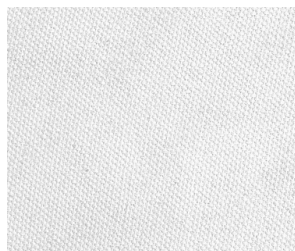


## More Plain Weaves

**Linen**



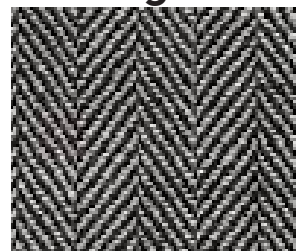
**Canvas**



Linen and canvas are both plain weaves, but one from larger Flax yarns that may contain nodes, and one from compact cotton.

## Broken Twills

**Herringbone**

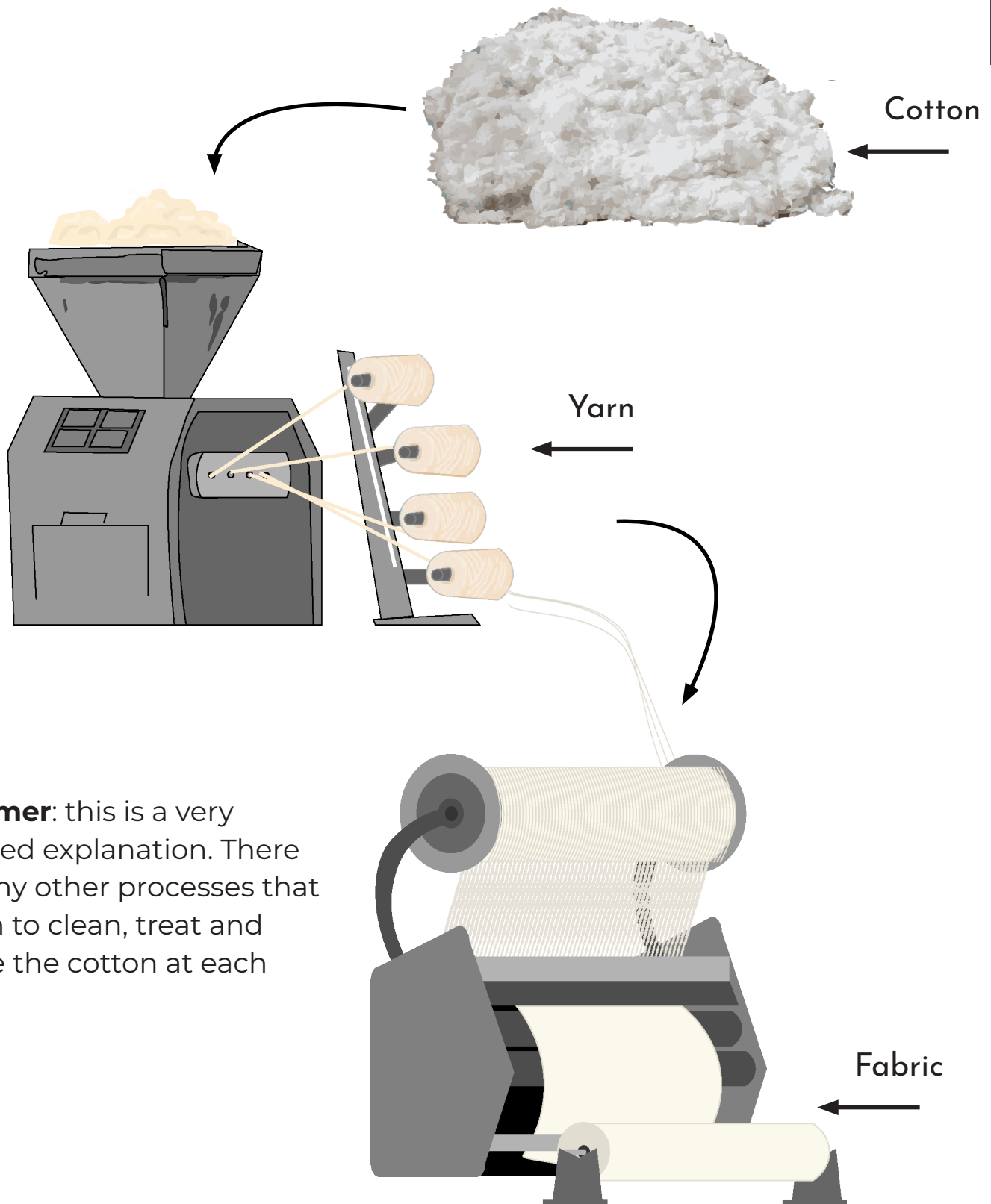


**Chevron**



In a broken twill the weave alternates direction, combining right and left hand twills.

# How does cotton turn into fabric?



**Disclaimer:** this is a very simplified explanation. There are many other processes that happen to clean, treat and prepare the cotton at each stage.

## How & When do fabrics get their color?

Fabrics can either be **Fiber Dyed**, **Piece Dyed** or **Yarn Dyed**. While apparel may also be **Garment Dyed**.



#1

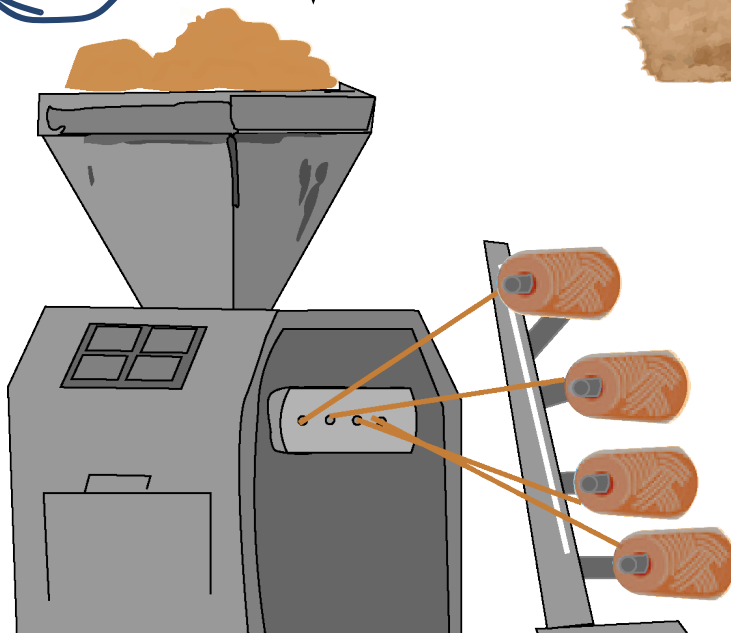
Fiber Dye



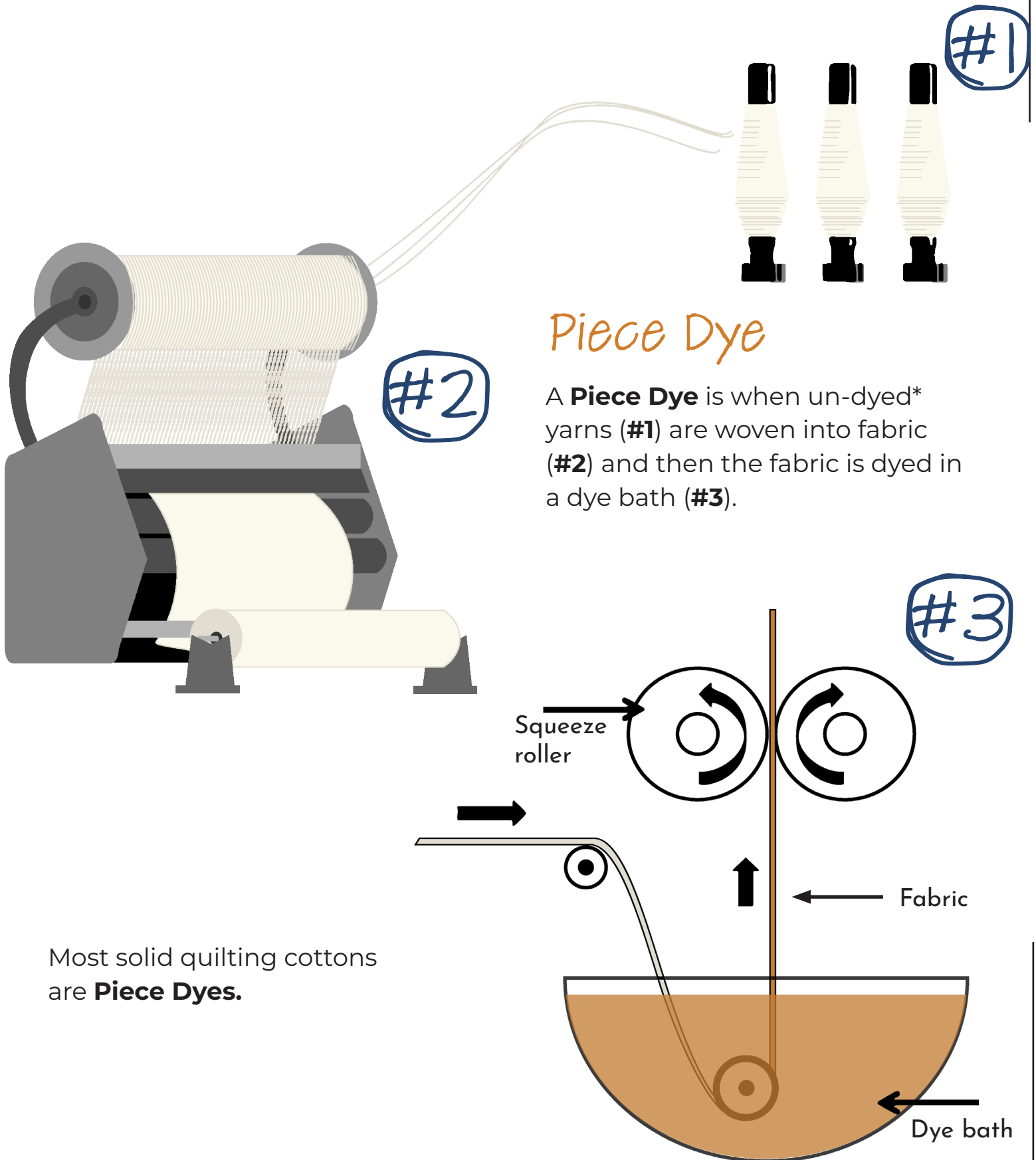
Dye bath

**Fiber Dyed** is when the fibers are dyed (#1) before they are spun into yarn (#2). In this method the dye penetrates the fibers the most and has the best color-fastness, but is also the most expensive process.

#2



**Fiber Dyeing** is typically used for fabrics that require a variegated color effect, like heathered knits, and won't usually show up in traditional quilting fabrics.

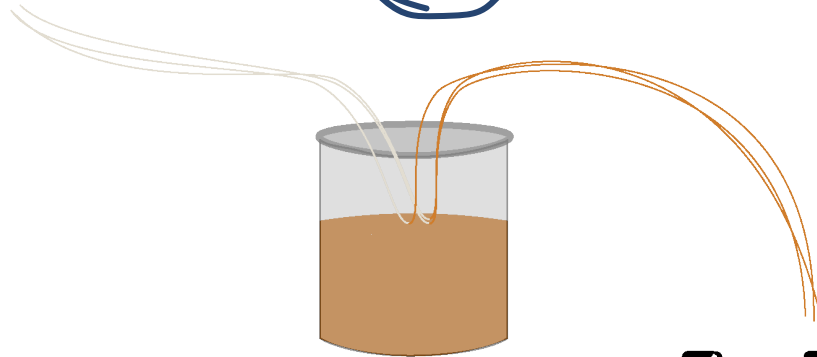




#1

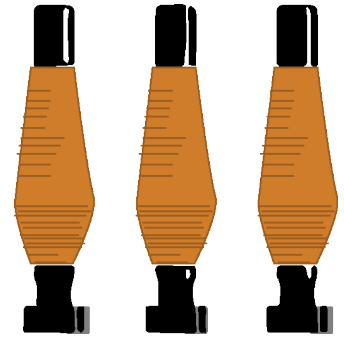


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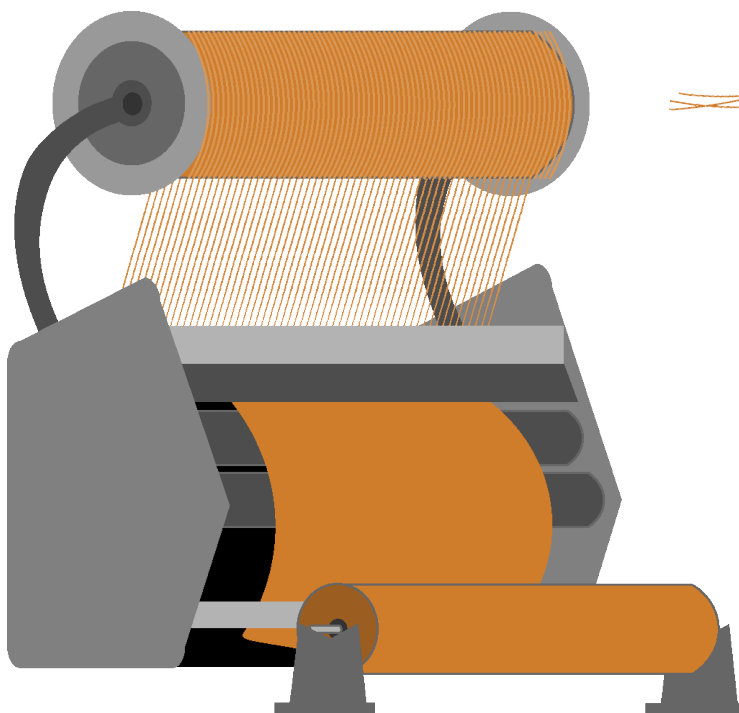


## Yarn Dye

A **Yarn Dye** is when un-dyed\* yarns (#1) are dyed in a dye bath (#2) and then the dyed yarns are woven into a fabric (#3).



#3



When many quilters refer to “wovens” they are usually referring to **Yarn Dyes** which can also be shot cottons or chambrays.

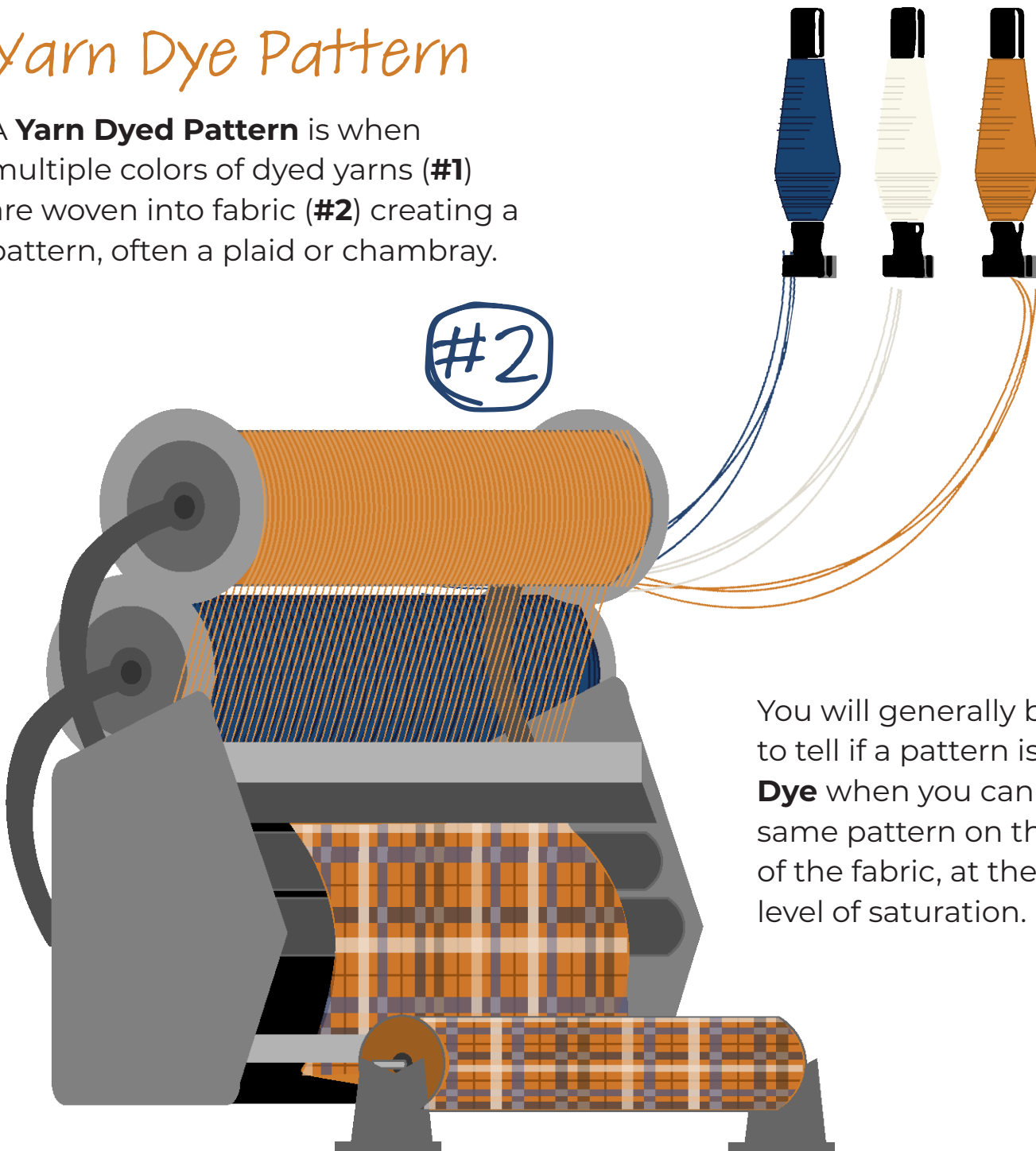
## What about patterns?

Woven patterns are generally **Yarn Dyed** or **Printed**.



## Yarn Dye Pattern

A **Yarn Dyed Pattern** is when multiple colors of dyed yarns (#1) are woven into fabric (#2) creating a pattern, often a plaid or chambray.



You will generally be able to tell if a pattern is a **Yarn Dye** when you can see the same pattern on the back of the fabric, at the same level of saturation.

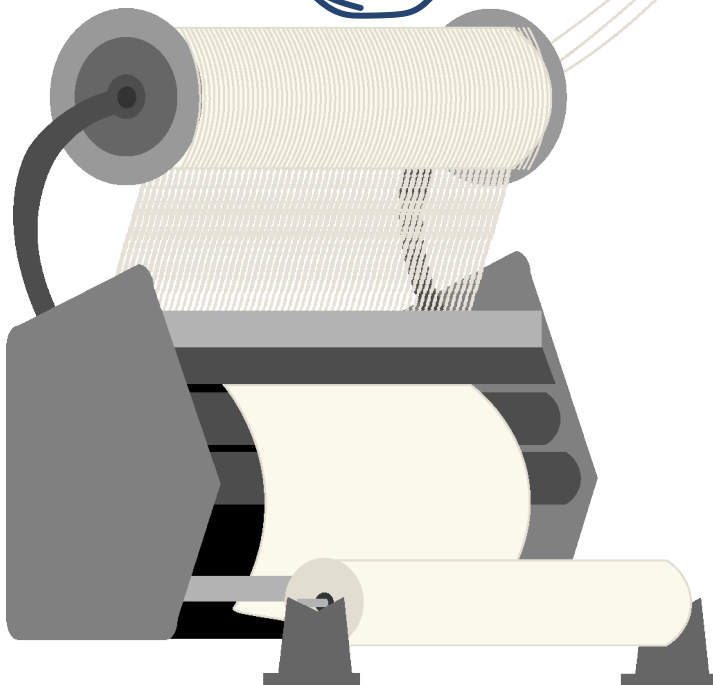
## Prints

A **Printed** pattern is when un-dyed\* yarns (#1) are woven into fabric (#2) and then the right side of the fabric is printed with dye (#3).

#1

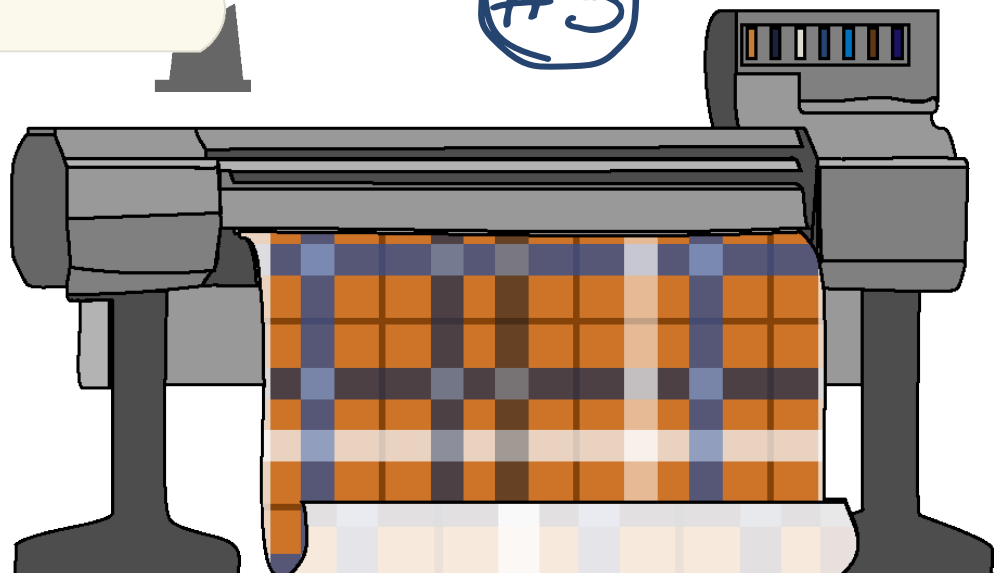


#2



You will generally be able to tell if a pattern is a **Print** when the back of the fabric appears more faded and streakier than the front.

#3



Most patterned quilting cottons are **Prints**.

## Terms to know...

**Greige:** fabric that is unbleached and un-dyed.

**PFD:** Prepared for Dying - textiles that have been fully processed to absorb dye evenly and consistently.

**Hand feel:** industry term to describe the cloths softness or smoothness.

**Color fastness:** material's ability to resist fading.

## Let me clarify...

### Why I say “generally” when I’m talking about these processes:

There are so many different variations and methods to every process I discuss, I am choosing typical examples and definitions to help explain these processes, but there are going to be some exceptions.

### \*Why I have an asterisks after un-dyed:

While these yarns have not been dyed, they have likely gone through many processes like desizing, scouring and bleaching, depending on the stage.

### My problem with prints:

Prints can ruin the hand-feel of a fabric. Yes, I said it. And yes, this is an over-generalization about printed fabric, but one that I ran into in the apparel industry all the time. Because when you are adding a layer of dye on top of a fabric, and adding all the things to make the dye not fade, it is generally going to make that fabric stiffer. That is generally not a problem for quilting, unless you are me, and you don't like that.



## What's next?

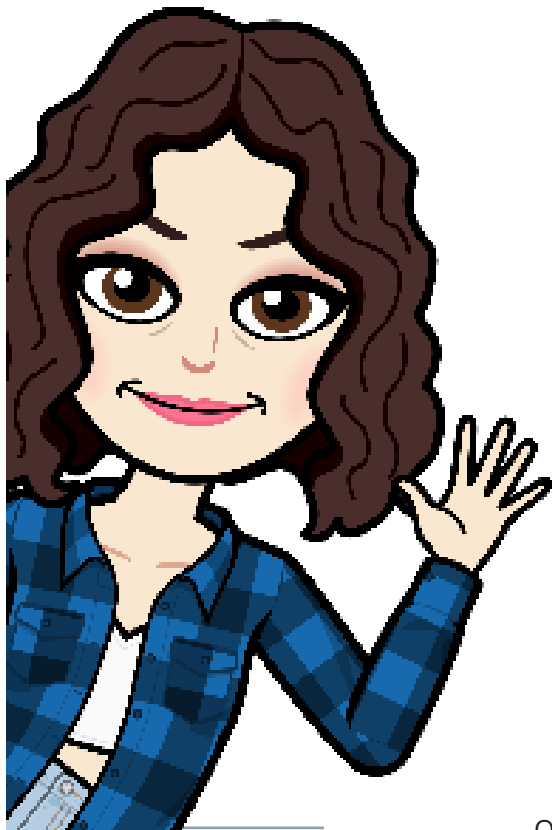
If you enjoyed this tiny peak into the world of textiles, there is so much more out there to learn! I recommend checking out an amazing non-profit called Fibershed - on their website they have a great list of resources.



<https://fibershed.org/resources-from-fibershed/>

## About Radha

I worked in apparel and textile manufacturing for 15 years, plus a design degree and stint as a seamstress.



My philosophy is it's easier to break the rules once you understand them, and I like to **break all the rules** when it comes to quilting. Like who said quilts had to be made entirely of quilting cotton? Or who said **upcycling** needed to look like upcycling?

I'm here to **share my knowledge** with you so you can feel confident turning anything into a quilt. And you just might **save a shirt from a landfill** along the way.

