

FABRICation

How to sew pretty much anything

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Hi!

FABRICation

@qedunham

- ▶ I make stuff
- ▶ No formal training
- ▶ Thanks to Mum, Grandma, and their home economics teachers

You...

- ▶ Just here to get indoors?
- ▶ Want to learn to sew?
- ▶ Know a bit, want to learn more?
- ▶ Already expert?

This talk...

Goals:

- ▶ Make you less afraid to attempt sewing
- ▶ Assign actionable self-teaching steps you can take later
- ▶ Help you find interesting things to search online
- ▶ Answer questions!

NOT sewing practice time. But drop by the PDXTech camp!

*The first 90 percent of learning a skill is figuring out what and how to practice.
The other 90 percent is practicing it.*

Thread Materials

- ▶ Natural fibers
 - ▶ Silk, cotton, linen, wool
- ▶ Natural polymers
 - ▶ Rayon, viscose, bamboo
- ▶ Synthetic polymers
 - ▶ Polyester, nylon, acrylic, elastane/spandex

Burn Test

<https://www.craftsy.com/sewing/article/burn-test-for-fiber-content/>

- ▶ Cotton
 - ▶ Smells like burning paper
 - ▶ Keeps burning quickly
- ▶ Linen
 - ▶ Burns like cotton
 - ▶ Slight afterglow
- ▶ Rayon
 - ▶ Burns faster than cotton
 - ▶ No afterglow after burning
- ▶ Silk
 - ▶ Curls away and smolders
 - ▶ Doesn't stay lit
 - ▶ Dissolves in bleach
 - ▶ Smells like burnt hair
- ▶ Wool
 - ▶ Burns like silk, but smellier
 - ▶ Feels rougher to the touch

Burn Test

<https://www.craftsy.com/sewing/article/burn-test-for-fiber-content/>

- ▶ Polyester
 - ▶ Melts
 - ▶ Won't stay on fire
 - ▶ No ash, just plastic beads
 - ▶ Smells toxic
- ▶ Nylon
 - ▶ Like polyester
 - ▶ Less smell
 - ▶ Melts more
- ▶ Spandex
 - ▶ Shrinks away, melts slowly
 - ▶ Leaves sticky goo
- ▶ Acetate
 - ▶ Melts and drips
 - ▶ Stinks
 - ▶ Leaves plastic beads

Choosing thread

- ▶ Material
 - ▶ Transparent? Stretch?
 - ▶ Weaker than fabric!
- ▶ Color
 - ▶ Will it show?
- ▶ Quality
 - ▶ Strength
 - ▶ Not too fuzzy
 - ▶ No knots or lumps
- ▶ Thickness
 - ▶ Proportionate to fabric

Fabric types

Most fabrics are made of many threads put together. They're categorized by how the threads are assembled:

- ▶ Knit
- ▶ Woven
- ▶ Felted

Sometimes we also sew with other stuff:

- ▶ Leather
- ▶ Plastic sheets
- ▶ Tyvek house paper

Traits of leather, plastic, tyvek

- ▶ Fail when perforated too much
- ▶ Can be slightly stretchy
- ▶ Often more waterproof and less breathable
- ▶ Often don't drape like cloth
- ▶ Pin holes never go away
- ▶ Tyvek is remarkably strong for its weight

- ▶ Like dreadlocks
- ▶ Usually no stretch
- ▶ Fail at points of stress or wear
- ▶ Washing and drying wool on hot makes felt
- ▶ Cheap and synthetic felts often have no knit or woven base

- ▶ Like your t-shirt or socks
- ▶ Stretchy, even if non-stretch thread
- ▶ Fails by unravelling ("runs")
- ▶ Broken thread can yield ladder or small hole

A special knit: Fake Furs

- ▶ Knit backing with pile
- ▶ Grain = direction the hair points
- ▶ Align pattern so hairs point the right way
- ▶ Cut only backing, not hairs
- ▶ Keep a vacuum handy, as they shed everywhere
- ▶ Melt or sew edge to reduce fraying and shedding
- ▶ Comb or brush hairs out of seam after sewing

- ▶ Like your jeans
- ▶ Only stretchy if the fibers stretch
- ▶ Edges fail by fraying
- ▶ Many threads must break to make a hole
- ▶ Many different weaves (dress shirt vs denim vs brocade)

How to fight fraying

- ▶ Chemically: Fray-check or glue
- ▶ Mechanically: Pinking shears
- ▶ Strategically: Leave seam allowance
- ▶ Choose enclosed seams
- ▶ Sew or serge edges

Other fabric terms

- ▶ Grain: Warp and weft of the loom
- ▶ Bias: 45 degrees from grain
- ▶ Right side: Ends up visible in finished work
- ▶ Wrong side: Not the right side
- ▶ Seam Allowance: Extra cloth that goes inside the seams so they don't fall apart

Choosing a Fabric

- ▶ Cost
- ▶ Durability
- ▶ Washability
- ▶ Colorfastness
- ▶ Convenience

Clothing Considerations

- ▶ Texture
- ▶ Breathability
- ▶ Drape
- ▶ Opacity
- ▶ Stretch

- ▶ Chalk
- ▶ Carbon paper
- ▶ Pencil
- ▶ Markers
- ▶ Sharpie

- ▶ Rotary cutter and mat
- ▶ Scissors
- ▶ Razor blade to remove stitches
- ▶ Quick-unpick

Holding Stuff

- ▶ Pins
- ▶ Safety pins
- ▶ Clips or clothespins
- ▶ Weights

Sticking Thread Through Fabric

- ▶ Needle
- ▶ Thimble or sailor's palm
- ▶ Awl
- ▶ Sewing Machine

Changing fabric's shape

- ▶ Iron
- ▶ Ironing board
- ▶ Hair straightener sometimes works
- ▶ Spray starch

- ▶ Expensive, even with coupons
- ▶ Fabric comes on bolts
- ▶ Fiber content clearly labeled
- ▶ Priced by the yard
- ▶ WASH BEFORE USING

- ▶ Pendleton in Portland
- ▶ Sometimes cheap offcuts, rejects
- ▶ More variety for specialty fabrics
- ▶ WASH BEFORE USING

- ▶ Custom prints: Spoonflower
- ▶ Custom dying: Etsy
- ▶ Or DIY!
- ▶ WASH BEFORE USING

- ▶ Cheap
- ▶ Don't always know fiber content
- ▶ Fabric comes in funny shapes
- ▶ Unpick seams, iron flat
- ▶ Try sheets, tablecloths, curtains
- ▶ WASH BEFORE USING

Wash your fabrics

- ▶ Some shrink
- ▶ Some bleed colors
- ▶ Dry clean only is often BS

Your Homework

- ▶ Read the tags of your own garments
- ▶ Guess fiber content by touch when shopping
- ▶ Guess knit/woven/other by touch in your closet or camp

- ▶ Sewing
- ▶ Gluing
- ▶ Melting, fusing
- ▶ Riveting, stapling

- ▶ Easy
- ▶ Prevents fraying
- ▶ Makes a mess
- ▶ Hard to get straight lines
- ▶ Often stiff or crunchy
- ▶ Hard to undo mistakes

- ▶ Iron-on tape gives straight line
- ▶ Rarely drapes right
- ▶ Invisible
- ▶ Generally not very strong
- ▶ Prevents fraying

- ▶ Can be stronger, if fabric is reinforced
- ▶ Can tear out
- ▶ Adds metal

Pros and cons

- ▶ Flexible
- ▶ Durable
- ▶ Usually easy to undo
- ▶ We have machines for it
- ▶ Makes lots of holes in fabric
- ▶ Waterproofing seams is fiddly

How sewing works

- ▶ Threads go through fabric layers
- ▶ Threads are tightened so layers stay together
- ▶ Threads are fastened so they don't fall out
- ▶ Basting: Temporarily sewing with a thread you'll pull out later, better than pinning

Threading your needle

- ▶ Take a piece of thread no longer than you can reach
- ▶ Shorter threads are harder to get tangled
- ▶ Stick one end through the eye of the needle
- ▶ Use threading tool to pull it through if necessary
- ▶ Optionally, double thread over so ends are together
- ▶ Knot thread at other end from needle
- ▶ Wax thread with a candle

Why I wax thread

- ▶ Sticks 2 threads together
- ▶ Flattens microscopic fuzzy bits of thread
- ▶ Reduces thread tangling
- ▶ Sliding through fabric easier reduces thread breakage

- ▶ Decide where seam will go
- ▶ Start at one end
- ▶ Hold fabric layers together with something
- ▶ Put needle from one side to the other
- ▶ Pull thread through
- ▶ 2mm along the seam, put needle through from the side it came out to the other
- ▶ Repeat ad nauseum

- ▶ Always stick the needle in at the side it most recently came out of
- ▶ This time, the place you stick it is "backward" from the direction you were sewing
- ▶ Back stitch locks thread in place and makes stronger seam

Ending a seam

- ▶ Fold fabric at last stitch and catch a little bit on your needle
- ▶ Take thread where it came out of the fabric, wrap around needle tip 2x
- ▶ Pinch the wrapped thread gently so it doesn't go anywhere
- ▶ Pull the needle forward just like any other stitch
- ▶ Cut thread 1" from the knot

- ▶ Right sides together
- ▶ Sew along seam with running stitch or backstitch
- ▶ Turn and press

Flat Felled Seam

- ▶ Wrong sides together
- ▶ Sew along seam line
- ▶ Press to fold seam allowance in half, so cut edge is at seam
- ▶ Press to fold seam allowance over the seam, so cut edge is inside
- ▶ Sew along side of folded seam allowance
- ▶ Now 2 rows of stitching show on the right side and 1 shows on the wrong side

- ▶ On top piece, press the seam allowance toward wrong side
- ▶ Optionally, press seam allowance of bottom piece toward right side
- ▶ Line up and pin top piece onto bottom piece
- ▶ Sew parallel lines through the 3 layers

- ▶ Wrong sides together, sew a line halfway between cut edge and final seam line
- ▶ Turn so right sides are together and press
- ▶ Keeping right sides together, sew along seam line

Bound edge or seam

- ▶ Cut strips of fabric on the bias
- ▶ Optionally sew their ends together
- ▶ Press their edges to their centers, then fold in half with edges inside
- ▶ Place over edge or seam and sew it on

Sewing Stretchy Fabrics

- ▶ Thread breaks if it's the shortest part
- ▶ Backstitch often
- ▶ Sew a zig-zag line

- ▶ Mark both sides
- ▶ Adjust as you sew
- ▶ Stitches should always be on the line
- ▶ Pin it a lot

- ▶ When you touch something made of cloth, look at its seams
- ▶ What color is the thread?
- ▶ How long are the stitches?
- ▶ What types of seams are used?
- ▶ How did they prevent fraying? Did it work?
- ▶ Can you find any hand stitching?

Store-bought patterns

- ▶ Several sizes on one pattern
- ▶ YouTube can help
- ▶ Look up pattern markings to align grain of fabric
- ▶ Follow directions

Decide what to make

- ▶ Planes are easier than curved surfaces
- ▶ Straight lines are easier to sew than curves
- ▶ Draw the thing you want
- ▶ Or work from an existing thing!

Identify the planes

- ▶ Measure the planes of the thing
- ▶ Draw them on paper
- ▶ Guess when uncertain
- ▶ Look to papercraft and free patterns for ideas

Build a paper mockup

- ▶ Cut out the pieces you guessed at
- ▶ Tape them together
- ▶ Note what's wrong
- ▶ Make larger by cutting then taping in more paper
- ▶ Make smaller by folding the paper and taping it up

Cut up the mockup

- ▶ Draw lines that look like good places for seams
- ▶ Make marks for piecing
- ▶ Cut along the lines, not the marks
- ▶ Transfer pattern pieces to fresh paper if they're a mess
- ▶ Label your pieces!

- ▶ Scale model
- ▶ Mock up in cheaper fabric with same stretch and drape
- ▶ Adjust pattern accordingly

Laying out a pattern

- ▶ Consider fabric print and matching
- ▶ Consider fabric grain - the bias stretches
- ▶ Within these constraints, play Tetris to avoid waste
- ▶ Place largest pattern pieces first
- ▶ Sew on a small piece if a corner is missing

Transfer pattern to fabric

- ▶ Attach paper to cloth with pins or weights
- ▶ Trace line of where to sew
- ▶ Trace any marks for matching pieces
- ▶ Add half an inch seam allowance
- ▶ Cut out around the seam allowance
- ▶ Remember, right sides will be together when sewing
- ▶ Fold fabric in half to place symmetrical patterns
- ▶ Can't undo cutting cloth!

- ▶ Pin cloth pieces together at piecing marks, then along seams
- ▶ RIGHT SIDES IN
- ▶ Plan how to turn a 3D shape
- ▶ Avoid the doughnut trap
- ▶ Think about sewing order

Plan sewing order

- ▶ Hardest-to-do-later comes first
- ▶ Usually, small stuff onto large stuff, then large stuff together
- ▶ Attach patches, pockets, etc ASAP
- ▶ Sometimes straps, ears, etc go into seams before sewing
- ▶ Everything outside while sewing will be inside final item
- ▶ Leave space to turn it!

Combining different sized pieces

- ▶ Taper: Cut make larger piece trapezoidal so one end matches smaller
- ▶ Gather: Sew along larger and bunch up fabric on the thread
- ▶ Pleat: Fold over bits of the longer piece till it's the size of the smaller
- ▶ Baseball cap pieces are tapered
- ▶ Tutus are gathered
- ▶ Kilts are pleated

- ▶ Cheapest filling: Cannibalize a pillow
- ▶ Push filling in with a pencil or chopstick
- ▶ Stuffing is the last step before sewing it shut
- ▶ Easy to fix if you put too much or too little

- ▶ Convex curves: Cut out Vs
- ▶ Concave curves: Straight cuts to seam
- ▶ Don't cut through seam
- ▶ Think how seam allowance lies after turning

Fixing mistakes

- ▶ Mend cuts in wrong places
- ▶ Pull out bad seams
- ▶ Add missing seams
- ▶ Wash out wrong marks

- ▶ Examine your backpack, tent, and shoes
- ▶ Contemplate how the pieces of fabric fit together to make a 3D shape
- ▶ Sketch the pattern pieces you see
- ▶ Guess what order they were assembled in
- ▶ Extra credit: Try to make a scale model copy!

- ▶ Find matching thread
- ▶ Sew where seam should be
- ▶ Old holes are often visible
- ▶ Hide knots inside garment

- ▶ Darning rebuilds fabric by hand.
- ▶ Choose yarn or thick thread
- ▶ Sew long stitches like warp
- ▶ Weave in long stitches perpendicular, like weft
- ▶ Sew haphazardly over it to make more dense

- ▶ Patching covers bad fabric with good.
- ▶ Choose material for patch
- ▶ Use iron on patch, or sew on fabric
- ▶ Press edges of patch to side that will go onto item
- ▶ Patch from inside or outside
- ▶ Pin patch in place, sew around edges
- ▶ Sew edges of hole onto patch, too

- ▶ Makes item smaller
- ▶ Measure how much smaller you want it
- ▶ Turn inside out, sew parallel to existing seam

- ▶ Darts make an item smaller in just one spot
- ▶ Pin smallest point and ends of dart
- ▶ Sew like a wide triangle from end to center to end

- ▶ Opposite of taking in
- ▶ Clothes used to have bigger seam allowance
- ▶ Everything is cheap these days
- ▶ Get off my lawn

- ▶ Gussets add new fabric to make a garment larger
- ▶ Make a slit, by cutting cloth or opening seam
- ▶ Hold the fabric in the shape you wish it was
- ▶ Patch the resulting hole

- ▶ “Supposed” to be hidden
- ▶ Hand sewing: Short stitches on outside, long stitches on inside
- ▶ Fold twice so raw edge is encased in hem
- ▶ Good place for of iron on hemming tape

Adding patch pockets

- ▶ Cut patch slightly larger than desired pocket
- ▶ Hem the side that will be open
- ▶ Pin it in place
- ▶ Stitch it on
- ▶ If sewing to a lining, try not to sew through outer layers of garment

Adding pockets in a seam

- ▶ Choose where in the seam the pocket shall go
- ▶ Cut the stitches to open the seam
- ▶ Attach some fabric to each side
- ▶ Make sure seams end up inside the garment where the pocket attaches
- ▶ Remake the seam you removed, but route it around where the pocket goes
- ▶ Cut away excess fabric

Enlarging small pockets

- ▶ Detach bottom of pocket from garment, if attached
- ▶ Cut open bottom of pocket
- ▶ Attach some fabric along the cut edge to extend the pocket
- ▶ Sew it shut where the bottom of the new, larger pocket goes
- ▶ Nobody cares what sides your seams end up on because it's all inside the garment

Shrinking waistbands the right way

- ▶ Remove entire waistband from garment
- ▶ Sew darts to make top of garment the right size
- ▶ Replace waistband
- ▶ Remake one side of fastener

Shrinking waistbands the easy way

- ▶ Cut waistband in a couple places
- ▶ Overlap the cut edges a bit
- ▶ Sew the overlapped bits together

- ▶ Make a channel where the elastic will go
 - ▶ Cut rectangle of fabric a bit longer and wider than elastic
 - ▶ Press edges under
 - ▶ Pin to garment
 - ▶ Sew along edges, leaving ends open
- ▶ Thread elastic through channel with safety pin
- ▶ Fasten one end of elastic to garment
- ▶ Try it on and figure out best length for elastic
- ▶ Fasten other end of elastic to garment

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