STRETCHLEARN · WORKBOOK

Weaving & Loom Work — Workbook

This workbook turns the course into hands-on practice you can keep and reuse. Each section maps to one course module, moving from warp-and-weft fundamentals and your first frame loom, through the sett and warp-length math, into warping and weaving balanced cloth on a rigid-heddle loom, and finally color, texture, and finishing. Use the worksheets, calculators, and logs to plan real projects, hit the right sett, weave square, and finish cloth that lies flat.

How Weaving Works and Your First Frame Loom

Lock in the warp-and-weft vocabulary, set up a frame loom, and weave an even first band of plain weave.

Checklist: Frame Loom Starter Kit Checklist

[ ] Rigid frame loom or four pieces of one-by-two lumber assembled square and non-flexing
[ ] Even row of finishing nails or pegs along the top and bottom rails, or saw-tooth notches
[ ] Smooth cotton warp on hand (8/4 cotton carpet warp or 3/2 cotton)
[ ] Worsted-weight or chunky weft in a light, solid color so stitches are visible
[ ] Tapestry needle or flat stick shuttle to carry the weft
[ ] Fork, comb, or weaving beater to press picks down
[ ] Shed stick or stiff ruler to lift alternate warp ends
[ ] Scissors and a tape measure

Worksheet: Warp vs Weft Identification Worksheet

For three different yarns you own, decide whether each belongs in the warp or the weft. Do the pull-and-pinch strength test before deciding, and write your reasoning.

Yarn name / fiber

Wraps-per-inch (WPI)

Survived a hard pull without breaking or pilling? (yes/no)

Smooth or fuzzy?

Best role (warp / weft)

Reason in your own words

Exercise: First Plain-Weave Band Drill

Warp your frame loom at about four to six ends per inch, weave a header, then weave at least thirty rows of plain weave. Focus on bubbling and an even beat. Then answer the prompts honestly.

• By how many millimeters did your width change from row one to row thirty (your draw-in)?

• Where did you see skipped over-under errors, and what caused them?

• Did your beat get harder or lighter as you went, and how did the row spacing change?

The Rigid-Heddle Loom and the Math of Sett

Choose the right heddle for your yarn and calculate sett, warp length, and yarn quantity before warping.

Worksheet: Wraps-Per-Inch and Sett Decision Sheet

Complete this for every new project yarn. Wrap the yarn around a ruler for one inch, count the wraps, then derive the sett for balanced plain weave (about half the WPI) and pick the matching heddle dent.

Yarn name and weight category

Measured WPI

WPI divided by 2 (target EPI)

Nearest heddle dent (5 / 7.5 / 8 / 10 / 12 / 12.5 / 15)

Drapier (lower dent) or firmer (higher dent)?

Sample woven and wet-finished before committing? (yes/no)

Exercise: Warp-Length and Yarn Math Drill

Plan a real scarf from finished size to total yarn. Use 10 percent take-up, 8 percent shrinkage, and 50 cm loom waste. Show every step so you can check it.

• For a 150 cm finished scarf, what is the warp length per end after take-up, shrinkage, and loom waste?

• For a 20 cm (8 inch) width at 10 EPI plus edge ends, how many warp ends do you need?

• Multiply ends by length per end: how many meters of warp yarn total, and how much weft including a 15 percent margin?

Checklist: Project Planning Pre-Flight Checklist

[ ] WPI measured and EPI chosen for the yarn
[ ] Correct heddle dent on hand to match the EPI
[ ] Finished width and length decided in inches and centimeters
[ ] Take-up, shrinkage, and loom waste added to warp length
[ ] Number of warp ends calculated including edge ends
[ ] Total warp and weft yardage calculated with a margin
[ ] At least one extra skein from the same dye lot secured
[ ] Project sheet written and saved before warping

Warping and Weaving Balanced Cloth

Direct-warp the loom, thread the heddle, tie on with even tension, and weave square plain weave with clean selvedges.

Checklist: Direct-Warping Step Checklist

[ ] Warping peg clamped at exactly the planned warp length from the loom
[ ] Warp tied to the back apron rod and brought through the first slot
[ ] Loops wound one per slot with even, light tension and counted to the planned end count
[ ] Loops cut at the peg and tied in slip-knotted bundles so they cannot slip back
[ ] Warp beamed on with separators every one to two revolutions under firm tension
[ ] One thread of each slot pair hooked into the neighboring hole, reading slot-hole-slot-hole
[ ] Front bundles tied on loosely, then snugged in a second pass to equalize tension
[ ] Both up and down sheds tested for a clean, even opening

Worksheet: Tension Troubleshooting Worksheet

When the shed looks uneven or threads droop, work through this sheet before weaving. Diagnose the fault and record the fix so you recognize it faster next time.

Symptom (drooping threads / wavy edge / uneven shed / loose bundle)

Suspected cause (uneven beaming / mis-threaded hole / loose tie-on / missing separator)

Which bundles or threads were affected?

Fix applied

Result after re-tensioning (drum-tight? clean shed?)

Exercise: Square-Cloth Calibration Drill

Weave a 15 cm sample, marking a 10 cm square with pins as you go. Count picks-per-inch with a ruler and compare to your EPI. Adjust your beat, not your sett, to bring them into balance.

• What is your measured picks-per-inch, and how does it compare to your EPI?

• Did the 10 cm marked square measure square off the loom, or did it distort?

• What beat adjustment (harder/lighter) moved you toward balanced, and by how much did picks-per-inch change?

Color, Pattern, and Finishing

Design a color-and-weave piece, sample hand-manipulated texture, and finish and wet-finish cloth so it lies flat.

Worksheet: Log Cabin Color Plan Worksheet

Plan a log cabin or striped piece on paper before warping, because the lengthwise color order is fixed once on the loom. Use two strongly contrasting colors and lay out the block sequence.

Color A (light) and Color B (dark)

Block width in number of ends

Threading order in block 1 (e.g. dark, light, dark, light)

Threading order in block 2 (flipped)

Number of blocks across the width

Weft alternation plan (A, B, A, B) and where to double a color to flip the lines

Exercise: Texture Sampler Drill

On the tail end of a warp, weave a labeled band of each technique anchored by plain weave above and below. Keep the sampler in a binder as a personal reference at your own sett.

• For soumak, which over-and-under count (e.g. over four, under two) gave the cleanest ridge in your yarn?

• For leno, how did the lacy openings hold after you washed the sample compared to before?

• For pick-up, how long a float could you carry before it snagged or looked weak?

Worksheet: Wet-Finishing Record Worksheet

Before finishing the real piece, finish your sample with the same method and record what happened, then finish the piece. Measure before and after to capture true shrinkage.

Fiber (wool / cotton / linen / blend)

Finishing method (hand-wash / machine warm / deliberate fulling / press)

On-loom or pre-wash size (length x width)

Finished size after drying (length x width)

Length shrinkage % and width shrinkage %

Hand and surface change observed (softer / fuller / bloomed / fulled)

Checklist: Off-the-Loom Finishing Checklist

[ ] Ends secured while still under tension (hemstitched in groups of three to four)
[ ] Warp cut off with enough length for fringe or hems
[ ] Fringe twisted or knotted and trimmed to an even length, or hems folded and stitched
[ ] Loose weft tails woven in or trimmed on the back
[ ] Wet-finishing tested on the sample first
[ ] Piece washed and finished by the correct method for its fiber
[ ] Cloth pressed or laid flat to dry straight
[ ] Finished measurements and true shrinkage recorded in the logbook

Your Action Plan

1. Build or set up a frame loom, warp it at four to six ends per inch, and weave a 30-row plain-weave band
2. Run the warp-vs-weft strength test on your yarns and sort each into warp or weft
3. Measure WPI for your project yarn and choose the matching heddle dent for balanced plain weave
4. Complete the warp-length and yarn math on a project sheet and buy yarn plus a same-dye-lot margin
5. Direct-warp the rigid-heddle loom, thread the heddle slot-hole-slot-hole, and tie on drum-tight
6. Weave a 15 cm calibration sample and adjust your beat until picks-per-inch matches your EPI
7. Weave the full project, advancing the warp and keeping the same shed, bubble, and beat throughout
8. Plan and weave a log cabin or striped band, then a labeled texture sampler of soumak, leno, and pick-up
9. Hemstitch the ends on the loom, cut off, and finish with twisted fringe or a stitched hem
10. Wet-finish a sample first, then finish the real piece by fiber, press it flat, and record true shrinkage