STRETCHLEARN · WORKBOOK

Soap Making — Workbook

This workbook turns the course into hands-on practice. Use it to set up your safety routine, formulate and document real recipes with a lye calculator, run cured-bar tests, and prepare compliant labels. Keep every page filled in: your batch records are the fastest route from beginner to a consistent, sellable maker.

Foundations: Soap Chemistry and Your First Bar

Build your safety routine and make a finished melt-and-pour bar while you learn the chemistry.

Exercise: Make and Evaluate Your First Melt-and-Pour Bar

Make a 500 g melt-and-pour batch following the lesson method. Melt to 50 to 60 C, color, add fragrance at 2 percent (10 g), pour, spritz with alcohol, and set. After unmolding, evaluate honestly and note what you would change.

• Which base did you use (clear, white, goat milk, shea) and why?

• What fragrance load did you use in grams, and was the scent too weak or too strong?

• Did you get surface bubbles or glycerin dew, and how will you prevent it next time?

• What one change will you make to your next melt-and-pour batch?

Worksheet: Workspace and Lye-Safety Setup Sheet

Complete this before you ever open a lye container. Walk your real space and fill in each field; do not start cold-process until every line is done.

Soaping location and ventilation source (window / range hood)

PPE on hand (goggles, gloves, long sleeves, apron, respirator) — yes/no each

Heat-safe lye-mixing container material (HDPE #2 / stainless / borosilicate)

Spill kit location (vinegar, paper towels, water access)

Where lye is stored (sealed, dry, labeled, out of reach) — describe

Confirmed rule written out: 'Always add ____ to ____'

Checklist: Pre-Soap Safety Checklist (run every batch)

[ ] Goggles, gloves, long sleeves, and closed-toe shoes on
[ ] Children and pets out of the room
[ ] Ventilation open before mixing lye

[ ] Vinegar and running water within arm's reach
[ ] All tools dedicated to soap only, never food
[ ] Lye and water weighed separately on a digital scale
[ ] Lye added to water, never water to lye

Ingredients and Recipe Formulation

Design a balanced recipe and run it through a lye calculator before making anything.

Worksheet: Recipe Formulation Sheet

Design a 1000 g oil recipe. List each oil and its percentage (they must total 100), then run it through SoapCalc or another lye calculator and record the outputs. Set superfat to 5 percent and a 33 percent lye solution unless you have a reason to change them.

Oil 1 name and percentage

Oil 2 name and percentage

Oil 3 name and percentage

Oil 4 / castor name and percentage

Superfat percentage chosen

Water setting (percent of oils or lye concentration)

Calculator output: NaOH grams

Calculator output: water grams

Quality numbers (hardness / cleansing / conditioning / bubbly / creamy)

Exercise: Lye-Calculator Walkthrough

Open SoapCalc, Bramble Berry, or SoapmakingFriend. Enter the beginner blend from the course (Olive 40, Coconut 25, Palm 25, Castor 5, Shea 5) for a 1000 g batch at 5 percent superfat and a 33 percent solution. Compare your result to the course's worked example (~140 g NaOH, ~285 g water).

• Did your NaOH and water values match the worked example within a few grams?

• What happens to the NaOH amount if you raise superfat from 5 to 8 percent?

• Which quality number falls outside the comfortable range, and which oil would you adjust to fix it?

Checklist: Additives Sanity Check

[ ] Exfoliant kept to roughly 1 to 2 tsp per 500 g of oils
[ ] Clay or charcoal kept to about 1 tsp per 500 g
[ ] Sodium lactate added at about 1 tsp per 500 g to harden
[ ] Milk frozen and lye added slowly to keep it cool
[ ] No drug-like or treatment claims tied to any additive
[ ] Exact amount of every additive recorded in the batch log

Cold-Process Soapmaking Step by Step

Run a complete cold-process batch and record every variable so you can reproduce or fix it.

Worksheet: Cold-Process Batch Log

Fill this out live during your batch. These exact variables are what you will look at if a bar fails, so capture them as you go rather than from memory.

Batch date and lot number

Recipe name and total oil weight

Lye solution temperature at mixing (C)

Oil temperature at mixing (C)

Trace stage reached (light / medium / thick)

Fragrance used and grams (and percentage of oils)

Colorants and amounts

Gel decision (forced / prevented) and method

Observations: acceleration, ricing, seizing, or smooth

Exercise: Trace and Swirl Practice

Make one cold-process loaf and deliberately practice a single design (in-the-pot swirl or a two-color layer). Pour at the trace the design needs and note how much working time the fragrance gave you before thickening.

- Which trace stage did you pour at, and was it right for your design?
- Did the fragrance accelerate trace, and how did that affect the result?
- What would you change about temperature or trace to get a cleaner swirl?

Checklist: Defect Troubleshooting Pass

[ ] Checked top for soda ash (chalky white film)
[ ] Confirmed no lye pockets or crumbly white streaks (real emulsion, not false trace)
[ ] Bar is firm and not oily or weeping
[ ] No partial-gel ring in the cut face
[ ] Zap test done on a cured bar — no zap
[ ] pH of cured bar reads roughly 8 to 10

Curing, Finishing, and Selling Your Soap

Cure bars to maturity, formulate scent at safe rates, and prepare compliant labels.

Worksheet: Cure Tracking and Weight-Loss Sheet

Pick one sample bar from a batch and weigh it weekly during cure. When the weight stops dropping, the cure is essentially complete. Record the readings here.

Batch lot number and cure start date

Target cure length (4 to 6 weeks, or longer for high-olive)

Week 1 weight (g)

Week 2 weight (g)

Week 4 weight (g)

Week 6 weight (g)

Date weight stabilized / cure complete

Exercise: Fragrance Blend and IFRA Check

Design one scent blend using top, middle, and base notes (aim near 30/50/20). Before scaling to a batch, find each oil's IFRA category 9 (rinse-off) maximum from the supplier and confirm your total fragrance load stays at or below the lowest applicable limit.

• List your top, middle, and base notes and the grams of each.

• What is the IFRA rinse-off maximum for your most restrictive oil?

• Is your total load within 3 to 6 percent and under every IFRA cap? If not, how will you adjust?

• Does any oil (for example vanilla content) risk discoloring the bar?

Worksheet: Compliant Label Builder

Draft the front and back label copy for one product. Decide first whether you are selling plain soap or a cosmetic with skin-feel claims, then include every required element. Avoid any treatment or drug claim.

Positioning: plain soap or cosmetic (with claims)

Product identity (e.g., bar soap)

Net weight in oz and g

Business name and full address

Ingredient list in INCI names, descending by weight

Batch / lot number

Any warnings, and confirmation of no drug claims

Checklist: Ready-to-Sell Checklist

[ ] Recipe tested and stable across at least two batches
[ ] Batch log with lot numbers kept for every batch
[ ] Labels include identity, net weight, address, and INCI ingredients
[ ] No medical, antibacterial, or treatment claims anywhere
[ ] Product liability insurance considered
[ ] Local cottage-industry and sales-tax rules checked
[ ] Per-bar cost totaled and price set with a healthy markup

Your Action Plan

1. Set up a ventilated workspace and assemble all PPE before buying lye
2. Make a melt-and-pour bar to learn fragrance, color, and molding risk-free
3. Design a balanced recipe and verify the lye and water in a calculator like SoapCalc
4. Run your first cold-process batch, recording every variable in the batch log
5. Practice one swirl or layer technique until your pour and trace timing are reliable
6. Cure bars on an airflow rack and weigh weekly until the weight stabilizes
7. Build a tested signature scent using top, middle, and base notes within IFRA limits
8. Zap-test and pH-check cured bars before gifting or selling any of them
9. Write compliant INCI labels and decide your soap-versus-cosmetic positioning
10. Total your per-bar cost, set a markup, and confirm local selling and tax rules