CLASS OUTLINE

BEGINNER SOURDOUGH CLASS OUTLINE (90 minutes)

INTRODUCTION (5 minutes)

- Welcome & class objectives
- Overview of what they're taking home (starter, binder, recipes)
- Brief preview of class series structure

PART 1: SOURDOUGH STARTERS (28 minutes)

1A: What Is a Starter? (5 min)

- Basic fermentation science (wild yeast + bacteria)
- Why we use it vs. commercial yeast
- How it functions as leavener AND flavor developer

1B: Starter States - Visual Demonstrations (10 min) *Show the 3 prepared starters side-by-side*

- **Underfed/sluggish**: appearance, smell, float test result
- **Needs feeding**: timing indicators, hooch explanation
- **Peak/ready to bake**: dome shape, volume increase, float test, smell
- Common visual cues they'll see at home

1C: Maintenance Schedule (8 min)

- Feeding ratios explained (1:1:1 vs. 1:5:5, etc.)
- Room temp vs. refrigerated storage
- Feeding frequency based on storage method
- Common troubleshooting: "Is my starter dead?" indicators

1D: Using Starter in Recipes (5 min)

- When to use it (peak vs. just after peak)
- Hydration of starter and how it affects dough
- Note: "Baker's percentages are explained in your binder on page X"

PART 2: FLOUR & GLUTEN DEVELOPMENT (23 minutes)

2A: Understanding Gluten & Flour Basics (8 min)

- **Flour types quick-hit** (3 min):
    - Bread flour vs. AP (protein content)
    - Why recipes specify certain flours
    - Whole grain impact on hydration/fermentation
- **What gluten is and why it matters** (5 min):
    - The difference between mixing and developing
    - Why we care about development stages

2B: Gluten Development Stages - Demonstration (15 min) *Show 3 pre-made dough samples*

- **Undermixed**:
    - Visual: shaggy, tears easily
    - Windowpane test: fails immediately
    - What happens if you bake this
- **Partial development**:
    - Visual: smoother but still rough patches
    - Windowpane test: stretches but tears
    - When this stage is acceptable
- **Full development**:
    - Visual: smooth, cohesive
    - Windowpane test: thin, translucent membrane
    - Dough strength indicators (bounce-back, surface tension)
- **Mixing methods for home**: hand mixing, stretch & fold, coil folds
    - Reference to binder's technique guides

PART 3: FERMENTATION, SHAPING & SCHEDULING (32 minutes)

3A: Bulk Fermentation Explained (8 min) *Show pre-made doughs at different fermentation stages*

- What's happening during bulk
- Visual/tactile cues of fermentation progress:
    - Underfermented: dense, small bubbles
    - Properly fermented: airy, 50-75% volume increase, jiggly
    - Overfermented: flat, large irregular holes, smells boozy
- Temperature's impact on timing
- The "poke test" demonstration

3B: Shaping Demonstration (7 min) *Use one of the properly fermented dough samples*

- Basic boule shaping technique
- Building surface tension
- How properly fermented dough behaves vs. under/over fermented

- Brief mention: detailed shaping in future class, but this shows you what comes next

3C: Creating Your Baking Schedule (12 min)

- **Working backwards from when you want to bake**
- Sample schedules walkthrough:
    - Weekend morning bake
    - Weeknight bake (overnight proof)
    - Long cold proof method
- Flexibility points in the timeline
- Using the fridge as a "pause button"
- Temperature adjustments for faster/slower fermentation
- Reference to binder's schedule templates

3D: Final Fermentation (Proof) Overview (5 min)

- Bulk vs. proof differences
- Cold proof advantages for beginners
- Poke test for proof readiness
- Brief mention of scoring/baking (reserved for future classes)

WRAP-UP & TAKEAWAYS (5 minutes)

Review Key Success Factors:

- Keep your starter on a consistent schedule
- Use the right flour for your recipe
- Master the windowpane test for mixing
- Learn to read fermentation cues (not just time)
- Plan your timeline before you start

Binder Contents Overview:

- Starter feeding schedule chart
- Flour guide
- Windowpane test visual guide
- Baking schedule templates (multiple scenarios)
- Beginner recipes (2-3 principle-based)
- Troubleshooting guide
- Glossary of terms
- Baker's percentage reference
- Preview of next class topics

Q&A + Starter Care Instructions

- Answer immediate questions
- Emphasize first feeding timeline for their take-home starter
- Encourage them to practice before next class

UPDATED BINDER SECTIONS:

1. ✓ Starter maintenance calendar
2. ✓ Visual guide to starter readiness
3. ✓ **Flour types & selection guide**
4. ✓ Gluten development photo guide
5. ✓ Fermentation stage photo guide
6. ✓ **Basic shaping technique photos**
7. ✓ 3-4 flexible baking schedules
8. ✓ 2-3 foundational recipes
9. ✓ Troubleshooting FAQ
10. ✓ Baker's percentage reference page
11. ✓ Class notes template

INTRODUCTION (5 minutes)

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[As students settle in]

Good [morning/afternoon], everyone! Welcome. I'm so glad you're here. My name is Scott, and I'm one of the chefs here at [Restaurant Name]. I've been working with sourdough for [X years], and I'm excited to share what we do here in our bakery with you today.

Before we dive in, let me tell you what you're getting yourself into over the next 90 minutes.

[Gesture to materials on table]

First, the good news: you're going home with some tools to get you started. Everyone will receive a live sourdough starter that's ready to use—this is the same starter we use here in the bakery. You'll also get a binder that has everything we're covering today: feeding schedules, recipes, troubleshooting guides, visual references, and some blank templates so you can plan your own bakes. Think of it as your sourdough roadmap.

[Set expectations]

Now, here's what we're NOT doing today: we're not baking bread. I know, I know—but here's why. Sourdough works on its own timeline, not ours. A full bake from start to finish could take 24 hours or more. Instead, what I'm going to show you today are the critical decision points in that process. We have doughs here at different stages—some mixed too much, some not enough, some ready to shape, some that sat too long. You're going to see what "right" looks like and what "wrong" looks like, so when you're standing in your kitchen at 10 PM wondering "is this done fermenting?"—you'll actually know.

[Build confidence]

By the end of today, you're going to understand three core things:

One: How to create, feed, and maintain a sourdough starter—and more importantly, how to tell when it's ready to actually use.

Two: How to recognize when your dough is properly mixed and when it's properly fermented. This is where most beginners struggle, and it's 100% visual and tactile. I'm going to show you exactly what to look for.

Three: How to build a baking schedule that works for YOUR life. Whether you want fresh bread on Saturday morning or you need to fit this around a work schedule, we'll map out how to make that happen.

[Preview the series]

This is the first class in a series we're developing. Today is fundamentals—starters, mixing, fermentation, timing. Future classes will dive deeper into shaping techniques, scoring, baking itself, and working with different types of dough. But you've got to walk before you run, right? Everything starts with understanding your starter and your dough.

[Set the tone]

One more thing: please ask questions as we go. There's no such thing as a stupid question in sourdough. This is living dough—it doesn't read recipes, it doesn't care what the internet says, and it's going to do slightly different things in your kitchen than it does in mine. The goal here is for you to understand the *why* behind what's happening, not just follow steps blindly.

[Transition]

Alright, let's get started. We're going to begin with the heart of everything: the sourdough starter itself.

[Move into Part 1]

PART 1: STARTERS

PART 1: SOURDOUGH STARTERS (28 minutes)

1A: What Is a Starter? (5 min)

[Hold up a jar of active starter]

So, what exactly is this stuff? At its most basic, a sourdough starter is just flour and water that's been colonized by wild yeast and bacteria. That's it. No magic, no secret ingredients—just flour, water, and time.

[Point to the starter]

But here's what makes it special: unlike the little packets of commercial yeast you buy at the store, a sourdough starter is a living ecosystem. You've got wild yeast in here doing the heavy lifting of making the dough rise, and you've got lactic acid bacteria—same family as what makes yogurt tangy—creating all that complex flavor and acidity.

When you use commercial yeast, you get bread that rises predictably and tastes... like bread. Fine, nothing wrong with that. But when you use a sourdough starter, you're getting fermentation that develops flavor over hours or even days. You get that characteristic tang, that deeper complexity, that chewy texture. You're tasting *time*.

[Practical point]

Now, your starter does two jobs in your dough. Job one: it's your leavener. The yeast produces carbon dioxide, which gets trapped in the gluten network and makes your bread rise. Job two: it's your flavor developer. Those bacteria are producing lactic acid and acetic acid—that's what gives sourdough its signature sour taste. The longer and slower your fermentation, the more flavor you build.

[Set up next section]

But here's the thing—and this is critical—your starter is only useful if it's *active*. A starter sitting in your fridge for three weeks? Not active. A starter you just fed ten minutes ago? Not active. A starter that's been sitting on your counter for three days? Probably dead.

So how do you know when it's ready to use? That's what we're about to look at.

1B: Starter States - Visual Demonstrations (10 min)

[Bring out three jars of starter in different states, lined up on the table]

Alright, I've got three starters here, and they're all going to tell you a different story. Learning to read your starter is the single most important skill you'll develop, because if you use it at the wrong time, your bread will not work. Period.

[Pick up jar #1 - underfed/sluggish starter]

Starter #1: Underfed or Sluggish

Look at this one. What do you notice? It's kind of... flat, right? Maybe a few bubbles on top, but it's dense, it hasn't risen much since the last feeding.

[Open the jar, let them smell]

Smell it. Pass it around if you want—don't be shy. What do you smell? It's not that fresh, yeasty smell. It might smell a little sour, maybe a bit like acetone or nail polish remover. That's because the yeast is starving. It's eaten through all the available food, and now the bacteria are dominating.

[Demonstrate the float test]

Here's a quick test we can do: the float test. Take a small spoonful of starter, drop it in a glass of water. If it's active and full of gas, it should float.

[Drop a spoonful - it sinks]

See that? Straight to the bottom. This starter is not ready to bake with. It's not dead—I could feed it and bring it back to life—but right now, it doesn't have the strength to leaven your dough.

[Pick up jar #2 - needs feeding]

Starter #2: Needs Feeding

Now look at this one. You might see this in your kitchen if you keep your starter in the fridge and pull it out after a few days.

[Point to the liquid on top]

See this liquid pooling on top? That's called hooch. It's mostly alcohol—a byproduct of fermentation. When you see hooch, your starter is telling you: "Hey, I'm hungry. I've eaten all my food and now I'm basically fermenting my own waste products."

You can pour it off or stir it back in—totally up to you. Stirring it back in will make your starter a little more sour. Pouring it off keeps it milder. Either way, this starter needs to be fed before you use it.

[Timing note]

If you keep your starter in the fridge, this is totally normal. You'll probably see hooch after 5-7 days. That's fine. Just means it's time for a feeding. If you're keeping it at room temperature and you see hooch after 12 hours? You need to feed it more often or use a different ratio.

[Pick up jar #3 - active, ready to bake]

Starter #3: Active and Ready to Bake

Now THIS is what you're looking for.

[Hold it up to eye level]

Look at the dome. It's risen—maybe doubled in size since I fed it. The surface is bubbly, it's got this really active, alive look to it. When I open this...

[Open the jar]

...it smells fresh. Yeasty. A little tangy, but not harsh. It smells like something you'd want to eat.

[Float test demonstration]

Let's try the float test on this one.

[Drop a spoonful in water - it floats]

Boom. Floats immediately. That means it's full of carbon dioxide, it's active, it's ready to work.

[Timing discussion]

Here's the thing about timing: this starter was fed about 4-6 hours ago, depending on the temperature in the room. In the summer, it might peak in 3-4 hours. In the winter, might take 8. You're not watching the clock—you're watching the *starter*.

[Visual cues summary]

So when you're at home, here's what you're looking for:

- Has it doubled? Or close to it?
- Is the top domed, not flat or collapsed?
- Does it smell fresh and yeasty?
- Does it pass the float test?

If yes to all of those, you're good to go. Use it right at that peak, or within an hour or two after.

[What happens if you wait too long]

If you wait too long—if it rises, peaks, and then starts to collapse back down—you've missed the window. The yeast has eaten all the food and it's starting to weaken. You can still use it, but your dough might be sluggish. Better to feed it again and wait for the next peak.

[Pass the starters around]

Go ahead and pass these around. Look at them, smell them, get familiar with what these different stages look like. This is the knowledge that's going to save you hours of frustration at home.

1C: Maintenance Schedule (8 min)

[Transition]

Alright, so you can recognize an active starter. Now let's talk about how to keep it that way. Because your starter is alive, and like anything alive, it needs food and care.

[Feeding ratios]

When we talk about feeding a starter, we're talking about ratios. The most common ratio you'll see is 1:1:1. That means one part starter, one part flour, one part water by weight.

So if you've got 50 grams of starter in your jar, you add 50 grams of flour and 50 grams of water. Mix it up, and now you've got 150 grams of starter total. Simple.

[Why ratios matter]

But you might also see 1:5:5, or 1:2:2, or other ratios. What's that about? It's about how fast you want it to ferment. A 1:1:1 feeding? That starter will peak quickly—maybe 4-6 hours. A 1:5:5 feeding? You're giving it way more food, so it takes longer to eat through it all—maybe 8-12 hours or even longer.

Why would you want that? Maybe you're going to bed and you want it to peak right when you wake up. Or maybe you're going away for the weekend and you want to slow everything down. The ratio is your control knob.

[Room temperature vs. refrigerated]

Here's your big decision: room temperature or refrigerator?

Room temperature: Your starter is active and hungry. You're feeding it once or twice a day, every day. This is great if you're baking multiple times a week. It's ready to use whenever you need it.

Refrigerator: Your starter goes into hibernation mode. Fermentation slows way down. You can feed it once a week, maybe even less. This is the way to go if you're baking occasionally—once a week, once every two weeks, whatever.

[Practical advice for beginners]

For most of you starting out, I'd recommend the fridge method. Feed your starter, let it sit at room temperature for an hour or two to get going, then stick it in the fridge. When you want to bake, pull it out the night before, feed it, and let it come to room temperature and peak. Easy.

[Common questions]

"Is my starter dead?"

Probably not. Unless it's growing mold or smells like something died in it, your starter is almost definitely salvageable. Even if it's been in the fridge for a month and looks terrible—feed it, give it 24-48 hours and a couple of feedings, and it'll probably bounce back.

Starters are resilient. They want to live. You'd have to really neglect one to kill it.

[Point to binder]

In your binder, you've got a full feeding schedule chart with different scenarios—daily feeding, weekly feeding, getting ready for a bake, troubleshooting weak starters. Use that as your reference.

1D: Using Starter in Recipes (5 min)

[Transition]

Okay, last piece of the starter puzzle: actually using it in a recipe.

[Timing]

First: when do you add it to your dough? Right at peak activity, or just after. If you add it too early—when it's only been fed for an hour or two—it's not strong enough yet. If you wait too long and it's collapsed, same problem. You want that sweet spot we talked about earlier: doubled, domed, bubbly, passes the float test.

[Hydration matters]

Second thing: hydration. Most starters are kept at 100% hydration. That means equal parts flour and water by weight. So if you have 100 grams of starter, it's 50 grams flour and 50 grams water.

Why does this matter? Because when you add starter to your dough, you're adding both flour AND water. The recipe accounts for that, but you need to know what hydration your starter is at. If a recipe assumes 100% and yours is at 80%? Your dough's going to be off.

[Keep it simple for beginners]

My advice: stick with 100% hydration. That's what most recipes assume, and it makes the math easy. Down the road, you can experiment with stiffer or looser starters, but for now, keep it simple.

[Baker's percentages - quick mention]

You'll see in your binder there's a page on baker's percentages. That's just the language bakers use to write recipes—everything is calculated as a percentage of the total flour weight. Don't worry about mastering that today. Just know it exists, and when you're reading recipes, you'll start to see those numbers.

[Transition to next section]

Alright, so now you know your starter, you know how to feed it, you know when it's ready. Next question: what do you DO with it? You mix it into dough. And that's where we're headed next—understanding how flour and water turn into actual dough structure.

Any questions on starters before we move on?

[Take 1-2 quick questions, then transition]

Great. Let's talk about gluten.

PART 2: FLOUR & GLUTEN DEVELOPMENT

PART 2: FLOUR & GLUTEN DEVELOPMENT (23 minutes)

2A: Understanding Gluten & Flour Basics (8 min)

[Start with flour - have a few bags/containers visible]

Before we talk about gluten, we need to talk about flour. Because not all flour is created equal, and this is where a lot of beginners run into trouble.

[Pick up bread flour]

Flour Types - Quick Hit

This is bread flour. High protein content—usually around 12-13%. That protein is what forms gluten. More protein means more gluten potential, which means stronger dough structure. This is what you want for sourdough.

[Pick up all-purpose flour]

This is all-purpose flour. It's got less protein—usually around 10-11%. It'll still work for sourdough, but your dough won't have quite as much strength or spring. It's softer, which is great for biscuits or pancakes, but it's not ideal for a high-hydration sourdough loaf that needs to hold its shape.

[Quick practical advice]

Here's my advice: when you're starting out, use bread flour. Follow recipes that call for bread flour. Once you understand how dough should feel and behave, then you can start experimenting with AP flour or mixing in whole grains.

Speaking of whole grains—

[Mention whole wheat if you have it]

Whole wheat flour, rye, spelt, all of those absorb more water than white flour. They also ferment faster because there's more food for the yeast to eat. If a recipe calls for 20% whole wheat and you decide to use 50%, your dough is going to behave totally differently. Just something to be aware of.

[Check binder reference]

There's a flour guide in your binder on page [X] that breaks down the different types, protein contents, and when to use what. But for today, just remember: bread flour for sourdough. Simple.

[Transition to gluten]

Alright, now let's talk about why protein content matters. It all comes down to gluten.

[What is gluten?]

Gluten is a network of proteins—mainly glutenin and gliadin—that forms when you mix flour and water together and then work that dough. Think of it like a net or a web. That web is what traps the gas produced by your yeast, which is what makes your bread rise and gives it structure.

[Demonstrate with hands - miming]

When you first mix flour and water, you've got loose proteins just floating around. But as you knead, fold, or stretch the dough, those proteins start linking up with each other. They form longer and longer chains, and those chains start tangling and cross-linking. That's gluten development.

No gluten development? Your dough is just a shaggy mess that won't hold gas. Full gluten development? You've got a strong, elastic dough that can trap all that CO_2 and give you a tall, airy loaf.

[Mixing vs. developing]

Here's an important distinction: mixing and developing are not the same thing.

Mixing is just combining your ingredients—starter, flour, water, salt—until there's no dry flour left. That takes a minute or two. You're just getting everything incorporated.

Developing is the process of building that gluten network. That takes time and mechanical action—kneading, folding, stretching. Depending on your method, that could take 10 minutes of active work, or it could happen slowly over several hours with periodic folds.

[Why this matters]

Why do we care about gluten development? Two reasons.

One: structure. If your gluten isn't developed enough, your dough can't hold its shape. It'll spread out like a pancake instead of rising up.

Two: oven spring. That's the final burst of rise you get in the oven. If your gluten network is weak, the gas just escapes instead of pushing your dough upward.

So when I show you these dough samples in a minute, you're going to see exactly what different levels of gluten development look like and how to test for it.

2B: Gluten Development Stages - Demonstration (15 min)

[Bring out 3 dough samples, clearly labeled]

Alright, here we go. I've got three doughs here that are all the same recipe, same hydration, but they've been mixed for different amounts of time. What you're about to see is the progression from "not even close" to "ready to go."

[Pick up sample #1 - undermixed]

Sample 1: Undermixed Dough

Look at this one.

[Hold it up, let them see it]

What do you notice? It's shaggy, right? It's rough. If I pull on it—

[Gently pull at the dough]

—it tears immediately. There's no elasticity. The ingredients are combined, but the gluten hasn't formed yet. This is what your dough looks like right after you've mixed everything together and maybe given it a few kneads.

[The windowpane test]

Now I'm going to show you the windowpane test. This is THE test for gluten development. You take a small piece of dough and you gently stretch it between your fingers, trying to make it thin enough that light can pass through it—like a windowpane.

[Demonstrate - it tears]

See that? I can barely stretch it at all before it rips. No windowpane. This dough has almost no gluten development.

[What happens if you bake this]

If you tried to bake this dough right now—assuming you fermented it and everything—you'd get a dense, flat loaf. The gluten network isn't there to trap gas, so all that CO_2 your yeast is producing would just escape. You'd end up with something closer to a hockey puck than a loaf of bread.

[Pass it around]

Go ahead and pass this around. Touch it. Pull on it gently. Get a feel for what undermixed dough feels like.

[Pick up sample #2 - partial development]

Sample 2: Partial Development

Now look at this one. Already looks different, right?

[Show the surface]

The surface is smoother. It's starting to come together. If I pull on it—

[Stretch it gently]

—it stretches a bit before it tears. There's some elasticity now. The gluten network is forming, but it's not complete yet.

[Windowpane test]

Let's try the windowpane test.

[Demonstrate - it stretches thin but tears before translucent]

Okay, so I can stretch it thinner than the first sample, but it still tears before I get to that translucent membrane. We're getting there, but we're not done.

[When this stage is acceptable]

Now here's the thing: for some types of bread, this level of development is actually fine. If you're making a rustic, craggy loaf with a very open crumb and you're using a high hydration dough, you might stop here and let time and fermentation do the rest of the work.

But for most beginner bakers, especially if you're doing a straightforward country loaf, you want to keep going until you hit full development. It's just easier and more forgiving.

[Pass it around]

Pass this one around too. Notice how it feels different from the first sample—smoother, more cohesive, but still a bit rough in spots.

[Pick up sample #3 - full development]

Sample 3: Full Development

And this is what we're aiming for.

[Hold it up]

Look at the surface. It's completely smooth. It's got a slight sheen to it. If I poke it—

[Poke the dough]

—it springs back. There's tension in the dough. It feels alive. That's the gluten network fully formed.

[Stretch it]

If I pull on it gently, it stretches easily without tearing. It's elastic but also strong.

[Windowpane test - the moment of truth]

And now, the windowpane test.

[Carefully stretch a small piece between your fingers, creating a thin translucent membrane]

There it is. You see that? I can stretch this dough so thin that light passes through it, and it's not tearing. That's a fully developed gluten network. That web of proteins we talked about earlier? It's complete. This dough is ready to trap gas, hold its shape, and give you oven spring.

[Other signs of full development]

Here are the other things you're looking for:

Surface tension: When I shape this dough, I can feel it tighten up. It wants to hold its shape.

Bounce-back: If I poke it, it springs back. That's elasticity.

Smooth appearance: No rough patches, no tears, just a cohesive, smooth skin.

This is the feel you're chasing at home. And honestly, the windowpane test is your best friend. It takes the guesswork out. If you can make a windowpane, you're good to go.

[Pass it around]

Pass this around. This is what properly developed dough feels like. Get your hands on it. Stretch a small piece yourself. This is the tactile knowledge that's going to make you successful.

[Quick note on over-mixing]

Now, I'm not going to show you an over-mixed dough today because honestly, it's pretty rare if you're mixing by hand at home. You'd have to really go after it for a long time. Over-mixed dough gets sticky, it loses structure, it feels broken down. If you ever get there, you'll know—but most beginners never have that problem. The problem is usually not mixing enough.

[Transition to mixing methods]

Mixing Methods for Home Bakers

Alright, so how do you actually develop gluten at home? You've got a few options.

[Option 1: Hand kneading]

Traditional kneading. Push the dough away from you with the heels of your hands, fold it back over itself, rotate, repeat. This works, but it's a workout, especially with high-hydration doughs. You're looking at 10-15 minutes of continuous kneading to hit full development.

[Option 2: Stretch and fold]

Stretch and fold. This is my favorite method for beginners. You let time do most of the work. Every 30 minutes during the first part of your bulk fermentation, you grab one side of the dough, stretch it up, fold it over itself. Rotate the bowl, repeat on all four sides. That's one set. You do this 3-4 times over a couple hours, and by the end, your gluten is fully developed without you having to knead at all. Gentle, effective, and way easier on your hands.

[Option 3: Slap and fold]

Slap and fold, also called French kneading. You pick the dough up, slap it down on the counter, fold it over itself. It's fast—you can develop gluten in 5-8 minutes this way—but it's messy and takes some practice. It's a great technique, but maybe not for your first few loaves.

[Option 4: Coil folds]

Coil folds. Similar to stretch and fold but even gentler. You slide your hands under the dough, lift it up from the center, and let the ends fold under themselves. Rotate 90 degrees, repeat. This is great for really wet doughs that are hard to handle.

[Check binder reference]

There are step-by-step photos and descriptions of all these techniques in your binder on page [X]. Pick one that feels comfortable and stick with it. They all work—it's just a matter of what fits your style.

[Practical advice]

Here's my advice for your first few bakes: use the stretch and fold method. It's forgiving, it gives you time to watch what's happening with your dough, and it works beautifully for sourdough. After each set of folds, do a windowpane test. Track your progress. By the third or fourth set, you should have full development.

[Summarize]

So to recap this section:

- Use bread flour for sourdough. It's got the protein you need.
- Gluten is what gives your dough structure and the ability to rise.
- The windowpane test is your best tool for checking development.
- Stretch and fold is your friend—let time and gentle handling do the work.

Any questions on gluten development before we move into fermentation?

[Take 1-2 questions, then transition]

Great. So now you've got a starter that's active, you've mixed your dough, and you've developed your gluten. Next question: how long do you wait before you shape it? That's all about fermentation. Let's talk about bulk.

PART 3: FERMENTATION, SHAPING & SCHEDULING

PART 3: FERMENTATION, SHAPING & SCHEDULING (32 minutes)

3A: Bulk Fermentation Explained (8 min)

[Transition from gluten section]

Alright, so you've mixed your dough, you've developed your gluten. Now what? You wait. But you're not just waiting—you're fermenting. This is bulk fermentation, and it's where the magic happens.

[What's happening during bulk]

During bulk fermentation, your starter is eating the sugars in the flour and producing carbon dioxide and acids. That CO2 is getting trapped in your gluten network, which makes the dough expand. At the same time, those acids are developing flavor and breaking down the dough in ways that make it more digestible and more delicious.

This is the longest part of your process—usually 4-6 hours at room temperature, but it could be 8-10 hours if it's cold, or 3 hours if it's really warm. The key is: you're not watching the clock. You're watching the *dough*.

[Bring out fermentation samples - have 3 bowls ready]

I've got three dough samples here, all from the same recipe, but they've been fermenting for different amounts of time. This is what you need to learn to recognize.

[Sample #1 - underfermented]

Underfermented Dough

Look at this one.

[Show the bowl, tilt it so they can see]

What do you notice? It's only risen a little bit—maybe 25-30%. If I look at the surface, I can see a few small bubbles, but not many. The dough is still pretty dense.

[Poke test demonstration]

Watch this. I'm going to poke it with my finger.

[Poke the dough firmly]

See how it springs back almost immediately? That means there's still a lot of tension in the dough. The gluten is tight. The yeast hasn't produced enough gas yet to really expand the network.

[What this means]

If you shaped and baked this dough right now, you'd get a loaf that's dense, tight-crumbed, maybe a little gummy. It wouldn't have that open, airy texture you're looking for. The yeast hasn't done its job yet. This dough needs more time.

[Sample #2 - properly fermented]

Properly Fermented Dough

Now look at this one. See the difference?

[Show the bowl]

This dough has risen significantly—maybe 50-75% larger than when I started. That's the range we're aiming for. Not doubled, necessarily, but definitely expanded.

[Point to the surface]

Look at the surface. You can see bubbles all over—some small, some larger. There's activity everywhere. If I tilt the bowl—

[Tilt the bowl gently]

—the dough jiggles. It's got air in it. It feels alive.

[Poke test]

Now watch the poke test on this one.

[Poke the dough]

See that? My finger goes in, and the dough springs back slowly—maybe halfway. That's what we're looking for. It's got some spring, but it's relaxed. The gluten has loosened up a bit. There's gas in there, but the structure is still intact.

[Smell it]

Come up here and smell this if you want. It smells yeasty, a little tangy, but it's pleasant. It's not harsh or boozy. That's a good fermented dough smell.

[What this means]

This dough is ready to shape. If you shape and bake this, you're going to get good oven spring, a nice open crumb, and great flavor. This is the sweet spot.

[Sample #3 - overfermented]

Overfermented Dough

And then we have this one. This is what happens when you wait too long.

[Show the bowl - the dough may look flattened or collapsed]

Look at the surface. It's not domed anymore—it might even be starting to collapse. You can see really large, irregular bubbles, and the dough looks... loose. Almost wet.

[Poke test]

Watch the poke test.

[Poke the dough - finger may go in easily and not spring back]

My finger goes in and the indent just stays there. No spring at all. The gluten structure has started to break down. The acids have weakened it, and the yeast has burned through all the available food.

[Smell it]

And the smell? It's really sour—maybe even boozy or vinegary. That's overfermentation.

[What this means]

If you try to shape this dough, it's going to be a nightmare. It'll be sticky, it won't hold tension, and it'll spread out instead of rising up in the oven. You might still be able to bake it—it won't be a disaster—but it's not going to be your best loaf. The texture will be gummy, the crumb will be uneven with big holes and dense spots, and it'll taste really sour.

[Pass samples around if possible]

Go ahead and pass these around. Touch them. Poke them. Get a sense for what these different stages feel like.

[Temperature talk]

Now, here's the thing about timing. I said bulk fermentation usually takes 4-6 hours, but that's at room temperature—let's say 70-75°F. If your kitchen is 80°F in the summer, it might only take 3 hours. If it's 65°F in the winter, it could take 8 or more.

Temperature controls everything. Warmer = faster fermentation. Cooler = slower fermentation.

[Practical advice]

So here's what I recommend: pick a consistent spot in your kitchen. Maybe it's on top of your fridge, maybe it's in a cabinet, wherever. Use that spot every time, and learn how your dough behaves there. Take notes. "Bulk took 5 hours at 72°F." Next time, you'll have a baseline.

And use the visual and tactile cues we just talked about—volume increase, jiggle, poke test. Those will never lie to you. The clock will.

[The poke test - emphasize it]

Let me emphasize the poke test one more time because it's so useful.

[Demonstrate again on the properly fermented dough]

Flour your finger. Gently poke the dough about half an inch deep.

- **Springs back fast:** Not ready yet. Keep fermenting.
- **Springs back slowly, halfway:** Perfect. Ready to shape.
- **Doesn't spring back:** You've gone too far. Shape it anyway and bake it, but make a note for next time.

This test works for bulk fermentation, and it works for your final proof too. Master this, and you'll never have to guess.

[Transition to shaping]

Alright, so you've got a properly fermented dough. What's next? You shape it. Let me show you what that looks like.

3B: Shaping Demonstration (7 min)

[Bring out the properly fermented dough sample]

So this dough has gone through bulk fermentation—it's expanded, it's bubbly, it's relaxed. Now we need to give it structure and tension before the final proof.

[Important caveat]

Now, I'm going to show you a basic boule shape today—that's just a round loaf. In a future class, we'll dive deep into different shaping techniques, troubleshooting, and all that. But today, I just want you to see what this step looks like and why it matters.

[Turn dough out onto surface]

First, I'm going to lightly flour my work surface and turn the dough out.

[Gently turn dough out of bowl]

See how it's relaxed? It wants to spread out. My job now is to create tension on the surface so it holds its shape and rises up instead of out.

[Pre-shape if doing it]

Some bakers do a pre-shape here—a gentle round to organize the dough—then let it rest for 20-30 minutes before the final shape. That rest is called a bench rest. For today, I'm going to skip that and go straight to the final shape, but just know that's an option.

[Shaping technique - boule]

[Demonstrate shaping]

I'm going to fold the edges of the dough toward the center, working my way around in a circle.

[Fold edges in, rotating the dough]

Each fold, I'm pulling the dough gently and folding it into the middle. This is creating layers and building tension on what will become the bottom of the loaf.

[Flip it over]

Now I flip it over so the smooth side—the top—is facing up, and the seam side is on the counter.

[Cupping motion]

Now I'm going to cup my hands around the dough and use the friction between the dough and the counter to create surface tension. I'm gently pulling the dough toward me in little circular motions.

[Demonstrate the dragging/tension building]

See that? The surface is tightening up. It's getting smooth and taut. I'm not pressing down—I'm using the stickiness of the dough on the counter to create that tension.

[Show the final shaped dough]

And there we go. Look at that surface. It's smooth, it's got tension. If I leave this alone for a minute, it's going to hold its shape. That's what we're after.

[Why this matters]

Why do we care about shaping?

Surface tension is what gives your loaf structure. Without it, the dough will spread in the oven instead of rising up. Proper tension = better oven spring.

Seam side down (or up in a banneton) helps everything stay together. If your seam is weak or your tension is poor, the dough can bust open in weird places during baking.

[How fermentation affects shaping]

Now, here's the connection to what we just talked about.

[Gesture to the three fermentation samples]

If I tried to shape the underfermented dough, it'd be really tight and hard to work with. It wouldn't want to relax or stretch. I'd be fighting it.

If I tried to shape the overfermented dough, it'd be a sticky mess. It wouldn't hold tension. It'd just slump and spread.

But this properly fermented dough? It's relaxed but still has structure. It's easy to shape, and it responds to my hands. That's why getting bulk fermentation right is so important—it sets you up for success in shaping.

[Final point]

After you shape, the dough goes into a banneton or a bowl for its final proof. We'll talk about that in just a minute. But I wanted you to see this step because it's the bridge between bulk

fermentation and the final rise. You're organizing the dough, giving it structure, and preparing it for the oven.

[In the binder]

There are step-by-step photos of shaping techniques in your binder on page [X]. Practice this at home. It's awkward the first few times, but by your third or fourth loaf, it'll feel natural.

Any quick questions on shaping?

[Take 1 quick question if needed, then move on]

3C: Creating Your Baking Schedule (12 min)

[Transition]

Alright, now let's talk about the big picture. You know how to maintain your starter, you know how to develop gluten, you know what bulk fermentation looks like. But how do you actually fit all of this into your life?

This is where a lot of beginners get stuck. They see recipes that say "Day 1: Feed starter. Day 2: Mix dough. Day 3: Bake." And they think, "I don't have three full days to babysit bread."

Good news: you don't have to.

[The key principle]

Here's the secret: you work *backwards* from when you want fresh bread. You decide: I want a fresh loaf Saturday morning at 9 AM. Now you reverse-engineer the timeline to make that happen.

Let me show you how.

[Scenario 1: Weekend Morning Bake]

Scenario 1: Fresh Bread Saturday Morning

Let's say you want to pull a fresh loaf out of the oven at 9 AM on Saturday. Maybe you're having people over for brunch, or you just want fresh bread for the weekend.

[Walk through the timeline backwards]

9:00 AM Saturday - Bread comes out of the oven Baking takes about 45 minutes, so...

8:15 AM Saturday - Bread goes in the oven Before that, I need to score it, load it, etc. Let's say 15 minutes of prep, so...

8:00 AM Saturday - Final proof is done Cold proofing in the fridge overnight usually takes 8-12 hours, so...

8:00 PM Friday night - Shaped dough goes in the fridge Before shaping, bulk fermentation takes 4-6 hours (let's say 5), so...

3:00 PM Friday afternoon - Mix the dough Before that, my starter needs to be at peak, which takes 4-6 hours after feeding, so...

9:00 AM Friday morning - Feed the starter

[Summarize]

So there's your schedule. Friday morning, feed your starter. Friday afternoon, mix your dough. Friday evening, shape it and put it in the fridge. Saturday morning, bake it.

Total active time? Maybe 30-45 minutes spread across two days. The rest is just waiting.

[Scenario 2: Weeknight Bake]

Scenario 2: Weeknight Bake with Overnight Proof

Now let's say you work during the day and you want fresh bread on a Tuesday night when you get home from work.

[Walk through the timeline]

6:30 PM Tuesday - Bread comes out of the oven Baking takes 45 minutes, so...

5:45 PM Tuesday - Bread goes in the oven I need to score and load, so let's back up to...

5:30 PM Tuesday - Final proof is done This one's been cold proofing since last night—let's say 12 hours, so...

5:30 AM Tuesday morning - Shaped dough goes in the fridge Before that, bulk fermentation overnight—let's say 8 hours in a cool kitchen (65-68°F), so...

9:30 PM Monday night - Mix the dough Starter needs to be ready, which takes 4-6 hours after feeding, so...

4:00 PM Monday afternoon - Feed the starter

[Summarize]

So you feed your starter Monday when you get home from work. You mix the dough before bed. You shape it first thing Tuesday morning and stick it in the fridge before you leave for work. You bake it Tuesday evening when you get home.

See how it works? You're using time—especially cold time in the fridge—to your advantage.

[Scenario 3: Long Cold Proof Method]

Scenario 3: The Long Cold Proof (Maximum Flexibility)

This is my favorite method for beginners because it gives you a ton of flexibility.

[Explain the concept]

You mix your dough, let it bulk ferment, shape it, and then stick it in the fridge for anywhere from 12 to 48 hours—sometimes even longer. Cold fermentation slows everything way down, which means you can bake whenever it's convenient.

[Example timeline]

Let's say you mix and shape on Saturday afternoon. You could bake Sunday morning. Or Sunday night. Or Monday evening. Or even Tuesday. The dough is just hanging out in the fridge, slowly developing flavor, waiting for you.

[Why this is great]

This method is forgiving. If life happens and you can't bake when you planned, no big deal—just leave it in the fridge another day. It also develops incredible flavor because of that slow, cold fermentation.

[One caution]

The longer it goes, the more sour it gets. If you like mild sourdough, bake it after 12-18 hours. If you like it tangy, let it go 36-48 hours. Beyond 48 hours, you might start to see over-fermentation issues—but you've got a big window to work with.

[Flexibility points in the timeline]

Let me point out where you have flexibility in any schedule:

1. Starter feeding: You can feed it the night before instead of the morning of. Just use a bigger ratio (like 1:5:5) to slow it down.

2. Bulk fermentation: You can speed it up by keeping the dough in a warm spot (75-80°F), or slow it down by keeping it cool (65-70°F). Every degree matters.

3. Cold proof: This is your "pause button." Once the dough is shaped and in the fridge, you control when you bake. 12 hours, 24 hours, 48 hours—it's up to you.

[Using the fridge as a pause button]

This is worth emphasizing. The fridge is your best friend.

[Example]

Let's say you're in the middle of bulk fermentation, and something comes up—you have to leave the house, or you're just tired and want to go to bed. Stick the dough in the fridge. Fermentation will slow to a crawl. When you're ready to continue, pull it out, let it come back to room temp, and keep going.

Same thing after shaping. Once it's in the banneton and in the fridge, it's in stasis. Bake it when you're ready.

[Temperature adjustments]

Quick note on temperature, because this is huge.

Warmer = faster. If you want to speed things up, find a warm spot. On top of the fridge, inside a turned-off oven with the light on, near (not on) a radiator. Just don't go above 85°F or you'll get funky flavors.

Cooler = slower. If you want to slow things down—maybe you're going to be out longer than you thought—move the dough to a cooler spot. Basement, unheated room, whatever. You're buying yourself time.

In the summer, I sometimes put my dough in a cooler with an ice pack to keep it from fermenting too fast. In the winter, I might put it near a heater. You're managing temperature to manage time.

[Reference the binder]

In your binder, you've got several pre-built schedules on page [X]:

- Weekend morning bake
- Weeknight bake

- Long cold proof
- Same-day bake (for when you're home all day)

Use these as templates. Once you do a few bakes, you'll start to develop your own rhythms and schedules that work for your life.

[The big takeaway]

Here's the big takeaway: *sourdough is flexible*. You're not a slave to the dough. You control the timeline by managing temperature and using the fridge strategically.

Don't let anyone tell you that you have to bake at a specific time on a specific day. Build a schedule that works for you.

3D: Final Fermentation (Proof) Overview (5 min)

[Transition]

Alright, last piece of the fermentation puzzle: the final proof, also called the final rise or just "proofing."

[Bulk vs. proof - what's the difference?]

So what's the difference between bulk fermentation and final fermentation?

Bulk fermentation happens after you mix the dough and before you shape it. The dough is in a big mass, fermenting as one unit, and you're developing flavor, strength, and volume.

Final fermentation happens after you shape the dough. Now it's in its final form—usually in a banneton or a bowl—and it's doing its last bit of rising before it goes in the oven.

The yeast is still producing CO2, the dough is still expanding, but now you're working with a shaped loaf that's gaining its final structure.

[Cold proof advantages]

Most of the schedules I showed you use a cold proof, and here's why that's great for beginners:

1. Convenience. You can proof overnight or even for a couple days. It fits into your life instead of demanding you be home at a specific time.

2. Flavor. Cold fermentation develops deeper, more complex flavors. The longer, slower process gives you a more interesting loaf.

3. Easier to score. Cold dough is firmer, which makes it way easier to score right before baking. Room-temperature dough can be sticky and soft—cold dough handles like a dream.

4. Forgiving. The cold slows everything down, so you've got a bigger window before over-proofing becomes an issue.

[Room temperature proof - quick mention]

You can also do a room-temperature final proof. This usually takes 2-4 hours depending on temperature. It's faster, but it requires you to be around to catch it at the right moment. For beginners, I usually recommend starting with cold proofs just because they're more forgiving.

[Poke test for proof readiness]

Remember the poke test we did during bulk fermentation? It works here too.

[Demonstrate if you have a proofed dough]

Take your dough out of the fridge (or if it's been at room temp, test it in the banneton). Flour your finger, gently poke the dough.

- **Springs back quickly:** Underproofed. Needs more time.
- **Springs back slowly, leaves a slight indent:** Perfect. Ready to bake.
- **Doesn't spring back, indent stays:** Overproofed. Bake it anyway, but expect less oven spring.

If you're baking straight from the fridge, you can actually bake it slightly underproofed because it'll get a final boost of rise in the oven. That's one of the advantages of cold proofing—you get better oven spring.

[What's next - baking and scoring]

So after your final proof, you're ready to bake. You'll score the dough, load it into a hot oven—ideally into a preheated Dutch oven or on a baking stone—and let the heat do its thing.

We're not covering scoring and baking in detail today. That's going to be a whole class on its own. But just know: after proofing, you're about 45 minutes away from fresh bread.

[Recap fermentation and proofing]

Let me recap the fermentation stages one more time because this is where beginners get lost:

1. **Mix your dough** → fully incorporate ingredients, develop gluten
2. **Bulk fermentation** → 4-6 hours (or longer if cold), dough expands 50-75%, poke test shows slow spring-back
3. **Shape the dough** → build surface tension, create structure
4. **Final fermentation (proof)** → in banneton, usually overnight in fridge (12-48 hours)
5. **Bake** → score, load into hot oven, bake ~45 minutes

Each stage builds on the last. If you nail bulk fermentation, shaping is easy. If you nail shaping, your proof will go well. If you nail the proof, your bake will be beautiful.

And all of it starts with an active, healthy starter.

[Transition to wrap-up]

Alright, we've covered a lot today. Let's bring it all together.

WRAP-UP & TAKEAWAYS

WRAP-UP & TAKEAWAYS (5 minutes)

[Take a breath, shift energy to closing]

Alright everyone, let's bring this all together. You've absorbed a lot in the last 90 minutes, and I want to make sure you leave here with clear next steps.

[Review key success factors]

If you remember nothing else from today, remember these five things:

[Hold up one finger]

One: Keep your starter on a consistent schedule.

Whether you're feeding it daily at room temperature or weekly in the fridge, consistency is key. Your starter will adapt to your routine, but it needs that routine. Feed it the same way, at roughly the same time, and it'll reward you with reliable performance.

And use the float test. That's your insurance policy. If it floats, you're good to bake.

[Two fingers]

Two: Use the right flour for your recipe.

Bread flour for sourdough. High protein. That's your foundation. Once you understand how dough should behave, then you can start experimenting with all-purpose or whole grains. But for your first several loaves? Bread flour. Keep it simple.

[Three fingers]

Three: Master the windowpane test for mixing.

This is your best tool for knowing when your gluten is fully developed. If you can stretch the dough thin enough to see light through it without it tearing, you're done. No guessing, no wondering. The dough will tell you.

[Four fingers]

Four: Learn to read fermentation cues, not just the clock.

Time is a guideline, but temperature changes everything. Your kitchen in July is different from your kitchen in January. Watch the dough. Look for that 50-75% volume increase. Watch for bubbles. Do the poke test. The dough will tell you when it's ready—trust it more than the timer.

[Five fingers]

Five: Plan your timeline before you start.

Work backwards from when you want fresh bread. Map it out. Write it down if you need to. And remember: the fridge is your pause button. If life happens, you can always slow things down or speed them up. Sourdough is flexible—it works around your schedule, not the other way around.

[Point to the binders]

Now, let's talk about what you're taking home with you today.

Binder Contents Overview

[Pick up a binder, flip through it as you talk]

Your binder is organized into sections, and each section corresponds to what we covered today. Think of this as your reference guide—when you're at home at 10 PM wondering "wait, what did Scott say about the poke test?", this is where you look.

[Go through the sections]

Section 1: Starter Maintenance You've got a feeding schedule chart here with different scenarios—daily feeding, weekly feeding, getting ready for a bake. There's also a visual guide showing what an active starter looks like versus a sluggish one. Use those photos. Compare them to your starter at home.

Section 2: Flour Guide A quick reference on flour types, protein contents, and when to use what. Bread flour, all-purpose, whole wheat—it's all in here.

Section 3: Gluten Development Step-by-step photos of the windowpane test, descriptions of undermixed versus fully developed dough, and guides for different mixing methods—stretch and fold, slap and fold, coil folds. Pick the method that feels right and practice it.

Section 4: Fermentation Stages Photos of underfermented, properly fermented, and overfermented dough. Visual cues, poke test results, what to look for. This section alone will save you from so many mistakes.

Section 5: Shaping Techniques Basic boule shaping with step-by-step photos. We'll go deeper in future classes, but this will get you started.

Section 6: Baking Schedules Four pre-built schedules: weekend morning bake, weeknight bake, long cold proof, and same-day bake. Use these as templates. Adjust them to your life. Write notes in the margins about what worked and what didn't.

Section 7: Recipes Three beginner-friendly recipes. A basic country loaf, a slightly higher hydration loaf, and a whole wheat blend. All written in baker's percentages with gram measurements. Start with the basic country loaf—nail that one first, then experiment.

Section 8: Troubleshooting Guide This is your troubleshooting FAQ. "My dough is too sticky." "My starter smells weird." "My bread didn't rise." Common problems, common solutions. Check here before you panic.

Section 9: Glossary All the terms we used today—bulk fermentation, windowpane test, oven spring, autolyse, banneton—defined clearly. If you hear a term and you're not sure what it means, look it up here.

Section 10: Baker's Percentage Reference A primer on how baker's percentages work. You don't need to master this on day one, but it's here when you're ready to understand the math behind the recipes.

Section 11: Class Notes Blank pages for you to write your own notes. Document your bakes. Track times, temperatures, what worked, what didn't. This becomes your personal baking journal.

[Set the binder down]

This binder is yours. Write in it. Dog-ear the pages. Spill flour on it. It's a tool, not a museum piece. Use it.

Q&A + Starter Care Instructions

[Shift to the starter jars]

Alright, now let's talk about your starter. You're each going home with a jar of active starter—this is the same culture we use here at SLO Food Market. It's healthy, it's active, and it's ready to work for you.

[Critical first feeding timeline]

Here's what you need to do when you get home:

If you're planning to bake in the next day or two, leave it on your counter and feed it once a day—equal parts starter, flour, and water by weight. Keep it at room temperature, and it'll be ready whenever you need it.

If you're NOT planning to bake right away, let it sit at room temperature for a couple hours so it can wake up and start showing some activity, then stick it in the fridge. It'll be fine there for a week. When you're ready to bake, pull it out the night before, feed it, and let it come to room temperature and peak.

[Feeding reminder]

Remember: 1:1:1 is your default ratio. 50 grams starter, 50 grams flour, 50 grams water. If you want to slow it down, use a bigger ratio like 1:5:5. It's all in the binder.

[Encourage practice]

My advice? Do a practice bake this week or next. Don't wait a month. The sooner you get your hands in dough, the sooner this will all click. Your first loaf might not be perfect—that's fine. The goal is to learn what the dough feels like, what your kitchen temperature does to timing, and how your schedule works.

By your third or fourth loaf, you'll feel confident. By your tenth, you'll be hooked.

[Open the floor]

Alright, we've got a few minutes left. What questions do you have? Anything we covered today that you want me to clarify?

[Take questions - be prepared for common ones like:]

- "How much starter do I need to keep?"
- "What do I do with all the discard?"
- "Can I use whole wheat flour in my starter?"
- "What if my kitchen is really cold/hot?"
- "How do I know if my starter is dead?"

- "Can I freeze starter?"
- "What's the best banneton to buy?"

[Answer 2-3 questions, keep it conversational]

[If no more questions or time is running out]

[Final encouragement]

Alright, if there are no more questions, let me leave you with this:

Sourdough has a reputation for being difficult, but it's not. It's actually really forgiving once you understand what you're looking at. The dough will tell you what it needs if you pay attention. Trust your senses—your eyes, your hands, your nose. They're better than any timer or thermometer.

And remember: every baker has made bad loaves. I've made hundreds of bad loaves. That's how you learn. So don't get discouraged if your first one doesn't turn out perfect. Adjust, try again, and keep going.

You've got everything you need now—the knowledge, the starter, the recipes, the support materials. Now it's just about doing it.

[Logistics]

Before you go, make sure you grab:

- Your starter jar
- Your binder
- Any handouts on the table

[Mention future classes]

We're going to be announcing future classes in this series soon—shaping and scoring, baking techniques, working with different flours and hydrations, sourdough pizza, sourdough discard recipes. If you're interested in continuing, keep an eye out for those. We'll also have your contact info from registration, so we'll send you updates.

[Thank them]

Thank you all for being here today. I really appreciate you taking the time to learn this with me. If you have questions after today—if you're mid-bake and something seems off—don't hesitate to reach out. We want you to succeed.

Now go home and bake some bread.

[End on a high note]

See you next time!

[Class ends - stay available for individual questions as people pack up]

END OF CLASS

BINDER STRUCTURE

REVISED BINDER STRUCTURE FOR SLO FOOD MARKET

Format: 3-ring binder with sheet protectors (allows students to add notes/recipes later)

Estimated page count: 35-40 pages

Color coding: Tabs or colored divider pages between sections

Branding: SLO Food Market logo on front cover only

DETAILED SECTION BREAKDOWN:

SECTION 0: WELCOME (2 pages)

Color: [Your brand color - maybe a welcome/intro color]

Page 1: Cover/Title Page

- SLO Food Market logo
- "Beginner Sourdough Baking Class"
- Date of class
- Your name
- Space for student's name

Page 2: How to Use This Binder

- Brief explanation of sections
- "This is your reference guide - write in it, mark it up, make it yours"
- Note about color-coded tabs
- Contact info for questions after class

SECTION 1: GETTING STARTED (3-4 pages)

Color: Green

Page 1: Equipment & Ingredients Shopping List Similar to King Arthur's page 4, but adapted for home bakers:

Essential (Must Have): ☐ Digital kitchen scale (grams) ☐ Large mixing bowl ☐ Bowl covers or plastic wrap ☐ Bench scraper ☐ Jar for starter (quart-size) ☐ Banneton or bowl + kitchen towel ☐ Dutch oven OR covered baker ☐ Bread flour (recommend specific brand you use)

Nice to Have: ☐ Dough whisk ☐ Lame or razor blade ☐ Baking stone/steel ☐ Parchment paper

Where to Buy Locally: [List 2-3 local kitchen stores or sources]

Online Resources: [List websites if needed]

Page 2: Flour Guide Clean table format:

Flour Type	Protein %	Best For	Notes
Bread Flour	12-13%	Sourdough loaves	Start here
All-Purpose	10-11%	Softer breads	Less structure
Whole Wheat	13-14%	Flavor, nutrition	Absorbs more water
Rye	Varies	Flavor	Use 10-20% max

Key Takeaway Box: "For your first 5-10 loaves: Use bread flour. Keep it simple."

Page 3: Why Use a Scale?

- Quick explanation of weight vs. volume
- "1 cup flour" can vary by 30+ grams depending on how you scoop
- All recipes in this binder use grams
- Basic conversions if they don't have a scale yet

SECTION 2: ⭐ QUICK REFERENCE CARD ⭐ (1 page, laminated)

Color: Bright yellow or orange - THIS IS THE MONEY PAGE

Layout: One-page quick-hit guide they can prop on counter

Left Column: Is My Starter Ready? ✓ Doubled in size ✓ Domed top (not flat) ✓ Bubbles on surface ✓ Fresh, tangy smell ✓ Passes float test

Feeding Ratios: 1:1:1 = Ready in 4-6 hours 1:5:5 = Ready in 8-12 hours

Right Column: Is My Dough Ready?

After Mixing: ✓ Passes windowpane test

After Bulk Fermentation: ✓ 50-75% volume increase ✓ Jiggles when moved ✓ Poke test: slow spring-back

Temperature Guide: 75°F = ~5 hours bulk 70°F = ~6 hours bulk 65°F = ~8 hours bulk

Bottom: When in Doubt: Use the fridge as your pause button

SECTION 3: YOUR FIRST BAKE - COMPLETE WALKTHROUGH (6-8 pages)

Color: Blue

This section walks through ONE complete bake chronologically with photos at each step

Page 1: The Big Picture Timeline Visual timeline showing:

- Feed starter → Mix dough → Bulk fermentation → Shape → Cold proof → Bake
- With typical time ranges for each step

Page 2-3: Step-by-Step Instructions Clear, numbered steps with photos:

1. Feed your starter (show photo of active starter)
2. Mix your dough (photo of shaggy dough)
3. Develop gluten (photo series: before/after windowpane)
4. Bulk fermentation (photo of dough in bowl, marked volume)
5. Shape (photo sequence)
6. Final proof (photo of banneton)
7. Score & bake (photo of scored loaf)

Each step has:

- What you're doing
- How long it takes
- What it should look like (photo)
- Common mistakes

Page 4-5: First Bake Checklist Actual checkboxes they fill in:

☐ Starter passes float test ☐ All ingredients weighed ☐ Dough mixed until no dry flour visible ☐ After fold #4: Windowpane test passes ☐ After bulk: Dough risen 50-75% ☐ After bulk: Poke test = slow spring back ☐ Shaped with good surface tension ☐ Proofed for ___ hours at ___ °F ☐ Scored before baking ☐ Baked in preheated Dutch oven

Notes section below for them to write observations

SECTION 4: STARTER DEEP DIVE (4-5 pages)

Color: Green

Page 1: Creating & Maintaining Your Starter Use King Arthur's instructions as a base - they're solid. Adapt wording to your style.

Page 2: Visual Guide to Starter Readiness THREE PHOTOS side-by-side:

- Photo 1: Underfed/sluggish (labeled with what to look for)
- Photo 2: Needs feeding (labeled, show hooch)
- Photo 3: Peak/ready (labeled, show dome)

Caption under each explaining what it looks like, smells like, float test result

Page 3: Feeding Schedule Reference Table

Schedule	Feed Ratio	Storage	When to Use
Daily baker	1:1:1	Counter	Baking 3+ times/week
Weekend baker	1:5:5	Fridge	Baking weekly
Occasional	1:10:10	Fridge	Baking monthly

Page 4: Starter Troubleshooting Q&A format:

- "Is my starter dead?"
- "What's that liquid on top?"
- "My starter smells like nail polish remover"
- "Can I use whole wheat flour?"
- "How do I revive neglected starter?"

SECTION 5: MIXING & GLUTEN DEVELOPMENT (3-4 pages)

Color: Orange

Page 1: Understanding Gluten

- Brief explanation (keep it to 2-3 paragraphs max)
- Why it matters
- What we're trying to achieve

Page 2: Windowpane Test Visual Guide FOUR PHOTOS in sequence:

1. Undermixed - tears immediately
2. Partial development - stretches but tears
3. Full development - thin, translucent membrane
4. How to perform the test (hands demonstrating)

Large callout box: "This is your #1 tool for knowing when mixing is done"

Page 3: Mixing Methods Four techniques with brief descriptions and small diagrams:

1. **Stretch & Fold** (RECOMMENDED FOR BEGINNERS)
    - Step-by-step with 3-4 simple drawings
    - "Do 4 sets, 30 minutes apart"
2. **Slap & Fold**
    - Brief description
    - "Fast but messy - try after a few loaves"
3. **Coil Folds**
    - Brief description
    - "Great for wet doughs"
4. **Traditional Kneading**
    - Brief description
    - "Works but requires more effort"

Page 4: Common Mixing Problems Photos showing:

- Dough that's too dry (how to fix)
- Dough that's too wet (how to fix)
- Undermixed appearance vs. properly developed

SECTION 6: FERMENTATION VISUAL GUIDE (3-4 pages)

Color: Yellow

Page 1: What Is Fermentation?

- Brief explanation (3-4 paragraphs)
- Bulk vs. final proof
- Why temperature matters

Page 2: Bulk Fermentation Visual Guide THREE LARGE PHOTOS:

Underfermented:

- Photo of dough in bowl
- Labels: "Only risen 25%", "Few bubbles", "Dense"
- Poke test result: Springs back fast
- "Not ready - wait longer"

Properly Fermented:

- Photo of dough in bowl
- Labels: "Risen 50-75%", "Bubbly", "Jiggly"
- Poke test result: Slow spring-back
- "READY TO SHAPE"

Overfermented:

- Photo of dough in bowl
- Labels: "Flat or collapsed", "Large irregular holes", "Smells boozy"
- Poke test result: No spring-back
- "Too far - shape anyway and learn for next time"

Page 3: The Poke Test

- Large photo showing finger poking dough
- Three outcome photos side-by-side
- Clear decision tree:
    - Fast spring = not ready
    - Slow spring = ready
    - No spring = overproofed

Page 4: Temperature Impact Chart

Kitchen Temp	Bulk Time	Notes
80°F	3-4 hours	Summer/warm kitchen
75°F	4-5 hours	Ideal
70°F	5-6 hours	Average
65°F	7-8 hours	Cool kitchen

Tips box: "Find your warmest spot: top of fridge, inside turned-off oven, etc."

SECTION 7: SHAPING BASICS (2-3 pages)

Color: Purple

Page 1: Why Shaping Matters

- Brief explanation
- What is surface tension
- How it affects oven spring

Page 2-3: Basic Boule Shaping Photo sequence showing 6-8 steps:

1. Flour surface lightly
2. Turn dough out gently
3. Fold edges to center
4. Flip over
5. Cup hands around dough
6. Drag dough toward you
7. Rotate and repeat
8. Final shaped boule

Each photo has 1-2 sentence caption

Note at bottom: "Detailed shaping techniques will be covered in our Intermediate Class"

SECTION 8: BAKING SCHEDULES & TEMPLATES (4-5 pages)

Color: Red

Page 1: How to Build Your Schedule

- "Work backwards from when you want bread"
- Simple visual showing the reverse-engineering process

Page 2: Pre-Built Schedule #1 - Weekend Morning Bake

Goal: Fresh bread Saturday 9 AM

Saturday 9:00 AM - Bread out of oven
Saturday 8:15 AM - Load into oven
Saturday 8:00 AM - Remove from fridge, score
Friday 8:00 PM - Shape, into fridge
Friday 3:00 PM - Mix dough
Friday 9:00 AM - Feed starter

Total active time: ~45 minutes spread over 2 days

Page 3: Pre-Built Schedule #2 - Weeknight Bake Similar format for Tuesday evening bake

Page 4: Blank Schedule Template Fillable template with spaces for them to write in:

- "I want bread at: _____"
- "Bake starts: _____" (45 min before)
- "Out of fridge: _____" (15 min before bake)
- "Shape & into fridge: _____" (work backwards 8-24 hours)
- "Mix dough: _____" (work backwards 5 hours)
- "Feed starter: _____" (work backwards 5 hours)

Multiple copies of this template

SECTION 9: RECIPES (6-8 pages)

Color: Brown/Tan

Keep it to 2-3 recipes maximum

Use King Arthur's format - it's clean and professional:

- Yield clearly stated
- Brief description (2-3 sentences)
- Ingredients with both volume and weight
- Clear numbered instructions
- Any tips in a box at the end

Suggested recipes:

1. **Basic Country Loaf** (naturally leavened, no commercial yeast)
2. **Whole Wheat Blend** (20% whole wheat)
3. **ONE fun variation** (maybe your bakery's signature? Or something simple like rosemary olive oil?)

Format each recipe like King Arthur's - they did this well

SECTION 10: TROUBLESHOOTING GALLERY (3-4 pages)

Color: Dark gray

This is the "what went wrong" section

Layout: Problem/Photo/Solution format

Common failures with photos:

Problem 1: Dense, Gummy Crumb

- Photo of sliced loaf showing dense interior
- **Likely causes:**
    - Underfermented bulk
    - Starter wasn't active enough
    - Didn't develop gluten fully
- **Fix for next time:**
    - Check: starter passes float test
    - Check: windowpane test passes
    - Check: dough rises 50-75% in bulk

Problem 2: Flat Loaf, No Oven Spring

- Photo
- **Likely causes:** Overfermented
- **Fix:** Watch for poke test, don't let bulk go too long

Problem 3: Huge Holes + Dense Spots

- Photo
- **Likely causes:** Poor shaping, uneven fermentation
- **Fix:** Practice shaping tension, ensure even folds during bulk

Problem 4: Pale Crust

- Photo
- **Likely causes:** Oven temp too low, not enough steam
- **Fix:** Preheat Dutch oven longer, check oven temp

Problem 5: Crust Too Dark, Interior Undercooked

- Photo
- **Likely causes:** Oven too hot, not baked long enough
- **Fix:** Lower temp by 25°F, bake longer

Problem 6: Loaf Spread Out Instead of Up

- Photo
- **Likely causes:** Too wet, poor shaping, overproofed
- **Fix:** Check hydration, practice shaping, watch proof time

SECTION 11: NOTES & TRACKING (3-5 pages)

Color: White/Blank

Simple template repeated 3-5 times:

BAKE LOG - Loaf #___

Date: _____
Recipe: _____
Room Temp: _____

STARTER
Feed time: _____
Peak time: _____
Float test: ☐ Pass ☐ Fail

MIX
Mix time: _____
Windowpane after fold #: _____

BULK FERMENTATION
Start: _____
End: _____
Total time: _____
Temp: _____
% volume increase: ~_____%
Poke test: ☐ Fast ☐ Slow ☐ None

SHAPE
Shape time: _____

PROOF
Start: _____
End: _____
Location: ☐ Counter ☐ Fridge
Temp: _____
Poke test: ☐ Fast ☐ Slow ☐ None

BAKE
Score pattern: _____
Bake time: _____
Oven temp: _____

RESULTS

☐ Great! ☐ Good ☐ Okay ☐ Needs work

What went well:

What to change next time:

Notes:

Section 0

SECTION 1: GETTING STARTED

SECTION 1: GETTING STARTED

Color: Green tab

PAGE 1: EQUIPMENT & INGREDIENTS SHOPPING LIST

What You Need to Bake Sourdough at Home

The good news? You don't need much specialized equipment to bake great sourdough. Here's what you actually need versus what's nice to have.

ESSENTIAL EQUIPMENT (Must Have)

☐ **Digital kitchen scale**

- Must measure in grams
- Capacity of at least 2kg (4.4 lbs)
- $15-30 online or at kitchen stores

☐ **Large mixing bowl**

- At least 3-4 quart capacity
- Glass, stainless steel, or ceramic

☐ **Bowl covers**

- Plastic wrap, beeswax wraps, or reusable bowl covers
- Keeps dough from drying out during fermentation

☐ **Bench scraper (dough scraper)**

- Metal or plastic
- Essential for handling wet dough and cleaning surfaces

☐ **Jar for starter**

- 1-quart glass jar with lid (like a mason jar)
- Wide mouth makes feeding easier
- Mark volume levels with tape or marker

☐ **Banneton (proofing basket) OR large bowl + kitchen towel**

- 9-10 inch round banneton with liner, OR
- Any 2-3 quart bowl lined with a well-floured kitchen towel

☐ **Dutch oven OR covered baker**

- 5-7 quart capacity
- Must be oven-safe to 450°F with lid
- Cast iron works great; ceramic works too

☐ **Parchment paper**

- Makes transferring dough into Dutch oven much easier

NICE TO HAVE (Optional)

☐ **Dough whisk**

- Makes initial mixing easier, but a wooden spoon works fine

☐ **Bowl scraper**

- Flexible plastic scraper for getting dough out of bowls
- Your hands work too

☐ **Lame or razor blade**

- For scoring bread before baking
- A sharp knife works in a pinch

☐ **Baking stone or steel**

- If not using a Dutch oven
- Helps with oven spring

☐ **Instant-read thermometer**

- For checking internal temperature (should be at least 200°F when done)

ESSENTIAL INGREDIENTS

☐ **Bread flour**

- High protein (12-13%)
- **Recommended brands we use:**
    - King Arthur Bread Flour
    - Central Milling Artisan Bakers Craft
    - Bob's Red Mill Artisan Bread Flour

☐ **All-Purpose flour** (for feeding your starter)

- Any good quality brand

☐ **Water**

- Tap water is fine for most areas
- If heavily chlorinated, let it sit out overnight before using

☐ **Salt**

- Fine sea salt or table salt
- NOT coarse kosher salt (different weight)

WHERE TO BUY LOCALLY

Kitchen Equipment:

- [Local kitchen store name]
- [Local kitchen store name]
- Target, Williams Sonoma, Sur La Table

Flour:

- SLO Food Market (of course!)
- [Local grocery stores that carry good flour]
- Online: King Arthur Baking, Central Milling

Online Resources:

- King Arthur Baking: kingarthurbaking.com
- Amazon for scales, bannetons, bench scrapers
- Lodge for affordable cast iron Dutch ovens

BUDGET-FRIENDLY ALTERNATIVES

Can't find a banneton? Use a 2-quart bowl lined with a well-floured kitchen towel (flour it HEAVILY so dough doesn't stick)

Don't have a Dutch oven? Use a roasting pan with an oven-safe lid, or even a large oven-safe pot with a lid

Starting completely from scratch? Minimum investment is about $40-60:

- Scale ($20)
- Bowl (you probably have one)
- Bench scraper ($8)
- Jar (you probably have one)
- Dutch oven ($25-40, or borrow one)
- Flour & salt ($10)

PAGE 2: FLOUR GUIDE

Understanding Flour for Sourdough

Not all flour is created equal. The protein content in flour determines how much gluten can form, which affects your bread's structure, rise, and texture. Here's what you need to know.

FLOUR TYPES COMPARISON

Flour Type	Protein Content	Best For	Water Absorption	Notes
Bread Flour	12-13%	Sourdough loaves, artisan breads	Standard	**START HERE** - Gives best structure and rise
All-Purpose Flour	10-11%	Softer breads, feeding starter	Standard	Less gluten = less structure; softer crumb
Whole Wheat Flour	13-14%	Adding flavor, nutrition, color	High (absorbs more water)	Use 10-30% in your total flour; ferments faster
Rye Flour	Variable	Distinctive tangy flavor	Very high	Use 10-20% max; very little gluten

White Whole Wheat	13-14%	Lighter whole grain option	High	Milder than regular whole wheat

---

WHY PROTEIN MATTERS

Protein = Gluten Formation = Structure

When you mix flour and water and work the dough, two proteins in flour (glutenin and gliadin) link together to form gluten. This gluten network:

- Traps gas produced by yeast
- Gives dough strength and elasticity
- Allows bread to rise up instead of spreading out
- Creates that chewy texture

Higher protein flour → Stronger gluten network → Better rise and structure

---

WHICH FLOUR SHOULD YOU USE?

For Your First 5-10 Loaves:

Use bread flour. That's it.

Don't experiment yet. Get comfortable with one flour so you learn what the dough should feel like, how it should rise, how it should behave. Once you've baked 5-10 successful loaves with bread flour, THEN start experimenting.

Once You're Comfortable:

Try adding whole grains for flavor and nutrition:

- Start with 10-20% whole wheat in place of bread flour
- Increase slowly to 30-50% if you like it
- Note: Whole grains absorb more water and ferment faster

For Feeding Your Starter:

All-purpose flour works great and is more economical for daily/weekly feedings. You can also use bread flour. Either works.

BRAND RECOMMENDATIONS

What we use at SLO Food Market:

- Bread Flour: [Your actual flour brand]
- Whole Wheat: [Your actual flour brand if different]

Other excellent options:

- King Arthur Bread Flour (widely available, very consistent)
- Central Milling Artisan Bakers Craft (high quality, great for sourdough)
- Bob's Red Mill Artisan Bread Flour (good, available at most groceries)

What matters most: Consistency. Pick one brand and stick with it while you're learning. Different brands behave slightly differently, and you want to eliminate variables while you're figuring this out.

COMMON QUESTIONS

Q: Can I use all-purpose flour instead of bread flour? A: Yes, but your dough will be softer, have less structure, and won't rise as dramatically. If you're already comfortable with sourdough, go for it. If you're a beginner, stick with bread flour.

Q: Does organic vs. non-organic matter? A: Not for learning. Once you're comfortable, experiment if you want. Organic flours can perform slightly differently.

Q: What about "high-protein" or "high-gluten" flour? A: That's 13-14% protein. It's great for bagels and very chewy breads, but bread flour (12-13%) is perfect for sourdough.

Q: Can I mix different brands? A: Yes, but while you're learning, keep it simple. One brand, one type.

HOW WHOLE GRAINS CHANGE THINGS

When you add whole wheat, rye, or other whole grain flours:

1. More Water Needed The bran in whole grains absorbs more water. You may need to add 5-10g extra water per 100g of whole grain flour.

2. Faster Fermentation
Whole grains have more nutrients for yeast to eat. Your bulk fermentation might be 30-60 minutes faster.

3. Denser Crumb The bran cuts through gluten strands. You'll get a tighter, denser crumb. That's normal and delicious.

4. Deeper Flavor Whole grains add nutty, earthy, complex flavors. This is why we use them!

STORAGE TIPS

Bread Flour & All-Purpose:

- Cool, dry place for up to 6 months
- Airtight container helps keep it fresh

Whole Wheat & Whole Grains:

- Refrigerate or freeze for longer storage
- The oils in the germ can go rancid at room temp
- Use within 3-4 months for best flavor

PAGE 3: WHY USE A SCALE?

The #1 Tool for Consistent Baking

If you take away nothing else from this class, take away this: **Buy a kitchen scale.** Here's why it matters.

THE PROBLEM WITH MEASURING CUPS

"1 cup of flour" can vary by 30-50 grams depending on:

- How you scoop it (digging in vs. spooning)
- How packed down the flour is in the bag
- Humidity in the air
- Whether you level it off or heap it

Real example:

- Scooped and packed: 1 cup = 140-150g
- Spooned and leveled: 1 cup = 120-125g
- Fluffed and spooned: 1 cup = 110-115g

That's a 30-40g difference - almost 25% more or less flour!

In bread baking, that difference can mean:

- Dough that's too stiff and dry → dense bread
- Dough that's too wet and slack → flat bread that spreads

WHY PROFESSIONAL BAKERS USE WEIGHT

Precision 50 grams of flour is 50 grams of flour, every single time, no matter who measures it or how they scoop it.

Consistency
When you make the same recipe twice with a scale, you get the same results. With cups? You might not.

Baker's Percentages Professional recipes are written in percentages of the total flour weight. This is the universal language of baking. A scale lets you understand and use these recipes.

Easy Adjustments Want to make 1.5x the recipe? Or half? Easy math with weight. Confusing with cups.

"BUT I DON'T HAVE A SCALE YET..."

If you're not ready to buy a scale, here are the most accurate conversions for the recipes in this binder. **But please get a scale soon - it will transform your baking.**

FLOUR CONVERSIONS (Use "spoon and level" method)

How to measure without a scale:

1. Fluff the flour in the bag with a spoon
2. Spoon flour into the measuring cup (don't pack it)
3. Level off with a knife

Approximate conversions:

- 1 cup bread flour = 120g
- 1 cup all-purpose flour = 120g
- 1 cup whole wheat flour = 113g

WATER (easy):

- 1 cup water = 227g
- 1/2 cup water = 113g
- 1/4 cup water = 57g

STARTER:

- 1 cup active starter (stirred down) = 227g
- 1/2 cup active starter = 113g

SALT:

- 1 teaspoon table salt = 6g
- 1 teaspoon fine sea salt = 6g
- ⚠️ 1 teaspoon Morton's kosher salt = 5g
- ⚠️ 1 teaspoon Diamond Crystal kosher salt = 3g

WHAT KIND OF SCALE TO BUY

Must-haves: ✓ Measures in grams (essential) ✓ Capacity of at least 2kg / 2000g / 4.4 lbs ✓ Tare function (zero out the weight of the bowl) ✓ Easy-to-read display

Nice-to-haves:

- Auto shut-off (to save battery)
- Flat design (easier to clean)
- Pull-out display (so you can see it when a big bowl is on top)

What to spend:

- Basic: $15-20 (Ozeri, Greater Goods)
- Mid-range: $25-35 (Escali, OXO)
- Professional: $40+ (My Weigh, Acaia)

For home baking, a $20-25 scale is perfect.

HOW TO USE A SCALE

Basic Process:

1. **Place bowl on scale**
2. **Press "Tare" or "Zero"** - Scale reads 0g
3. **Add your first ingredient** (e.g., flour)

4. **Press "Tare" again** - Scale reads 0g again
5. **Add your next ingredient** (e.g., water)
6. **Press "Tare" again**
7. Repeat until all ingredients are in

One bowl, one scale, perfectly measured ingredients. Easy.

COMMON QUESTIONS

Q: Do I really NEED a scale? A: For sourdough? Yes. For consistent results? Absolutely. It's the single best $20 you'll spend on your baking.

Q: Can I use a postal scale? A: If it measures in grams and goes up to at least 2kg, yes.

Q: What about a scale that only measures in ounces? A: Not ideal. Grams give you much more precision. 1 ounce = 28 grams, so you're losing a lot of accuracy.

Q: My scale turns off while I'm measuring. What do I do? A: Most scales auto-shutoff after 1-2 minutes of no activity. Just tap the bowl or add a tiny bit of flour to "wake it up."

THE BOTTOM LINE

Volume (cups) = Inconsistent Weight (grams) = Consistent

All the recipes in this binder are written in grams. All the techniques we taught you assume you're weighing ingredients. If you want to succeed with sourdough - not just once, but every time - get a scale.

Your bread will thank you.

[End of Section 1]

Is this the level of detail and formatting you're looking for? Should I continue with another section, or would you like me to adjust anything in Section 1?

SECTION 2: ⭐ QUICK REFERENCE CARD ⭐

SECTION 2: ⭐ QUICK REFERENCE CARD ⭐

Color: Bright yellow or orange tab Format: Single page, LAMINATED (can be propped up on counter)

SOURDOUGH QUICK REFERENCE GUIDE

Your At-A-Glance Decision Tool

Keep this page out while you bake - it has everything you need to make the right calls

---

LEFT COLUMN

IS MY STARTER READY TO USE?

✓ YES - Ready to bake when you see ALL of these:

- ✓ **Doubled in size** (or close to it)
- ✓ **Domed top** (not flat, not collapsed)
- ✓ **Bubbles on surface** (lots of them)
- ✓ **Fresh, tangy smell** (not harsh or boozy)
- ✓ **Passes float test** (small spoonful floats in water)

✗ NO - Not ready yet:

- Only risen a little
- Flat or collapsed top
- Few bubbles
- Smells like acetone/nail polish remover
- Sinks in float test

→ **Feed it again and wait for peak activity**

STARTER FEEDING RATIOS

Quick feeding (1:1:1)

- 50g starter + 50g flour + 50g water
- Ready in: 4-6 hours
- Use when: Baking same day

Slow feeding (1:5:5)

- 20g starter + 100g flour + 100g water
- Ready in: 8-12 hours
- Use when: Want it ready in the morning

Fridge storage:

- Feed with 1:5:5 or 1:10:10 ratio
- Let sit 1-2 hours at room temp
- Then refrigerate
- Feed once a week

IS MY DOUGH MIXED ENOUGH?

THE WINDOWPANE TEST

How to do it:

1. Take a small piece of dough
2. Stretch it gently between your fingers
3. Try to make it thin enough to see light through

✓ **PASS:** Thin, translucent membrane without tearing → Gluten is fully developed, ready to bulk ferment

✗ **FAIL:** Tears immediately or before translucent
→ Keep folding, test again in 30 minutes

RIGHT COLUMN

IS MY BULK FERMENTATION DONE?

Visual Check:

- ✓ Dough has risen **50-75%** in volume
- ✓ Surface is **bubbly and domed**
- ✓ Dough **jiggles** when you move the bowl
- ✓ You can see **bubbles through the side** of bowl

The Poke Test:

Flour your finger, poke dough ½ inch deep

Springs back FAST (in 1-2 seconds) → NOT READY - Keep fermenting

Springs back SLOWLY (halfway in 3-5 seconds)
→ ✓ READY TO SHAPE

Doesn't spring back at all → OVERPROOFED - Shape anyway, bake it, learn for next time

---

IS MY FINAL PROOF DONE?

For Cold Proofed Dough (from fridge):

- **12-18 hours:** Mild flavor, max oven spring
- **24-36 hours:** More sour, good spring
- **36-48 hours:** Very sour, less spring

Poke test after removing from fridge:

- Slow spring-back = ready
- You can bake slightly underproofed from cold - you'll get great oven spring

For Room Temp Proofed Dough:

Use poke test:

- Slow spring-back = ready (usually 2-4 hours)
- No spring-back = overproofed

TEMPERATURE MATTERS

Warmer = Faster | Cooler = Slower

Bulk Fermentation Times by Temperature:

Kitchen Temp	Typical Bulk Time
80°F	3-4 hours
75°F	4-5 hours ← Sweet spot
70°F	5-6 hours
65°F	7-8 hours
60°F	10-12 hours

Find your warmest spot:

- Top of refrigerator
- Inside turned-off oven (with light on)
- Near (not on) a heater

THE FRIDGE IS YOUR FRIEND

Use it as a PAUSE BUTTON:

During bulk fermentation: Dough fermenting too fast? Stick it in the fridge. It'll slow way down. Pull it out when you're ready to continue.

After shaping: This is the best time to use cold. Shape your loaf, put it in the fridge, and bake it anytime in the next 12-48 hours. Total flexibility.

BOTTOM SECTION (full width)

⚠️ WHEN IN DOUBT...

Starter not sure if it's ready? → Do the float test. It doesn't lie.

Dough feels different than expected? → Trust the visual/tactile cues (windowpane, volume, poke test) more than the clock.

Not sure if bulk is done? → Better to shape a little early than too late. Underfermented bread is dense but edible. Overfermented bread is a sticky mess.

Life interrupted your schedule? → Put it in the fridge. Always. It buys you time.

Something went wrong? → Bake it anyway. You learn more from failures than successes.

BASIC TIMELINE AT-A-GLANCE

Feed starter → 4-6 hours → **Mix dough** → 5-6 hours → **Shape** → 12-48 hours (fridge) → **Score & Bake** → 45 min → **BREAD!**

Total active time: About 30-45 minutes spread across 1-2 days

---

Questions? Stuck? Reference the detailed sections in this binder or contact us at [your email/phone]

SLO Food Market | Beginner Sourdough Class

[End of Section 2]

DESIGN NOTES FOR THIS PAGE:

- Print on bright yellow or orange cardstock
- Laminate it (glossy lamination works best)
- Use bold headers and checkmarks/X marks for visual scanning
- Consider using a slightly larger font (11-12pt instead of 10pt) for readability
- Box or highlight the "IS MY..." decision sections
- Use a table format for the temperature guide to make it scannable

SECTION 3: FIRST BAKE

SECTION 3: YOUR FIRST BAKE - COMPLETE WALKTHROUGH

Color: Blue tab

PAGE 1: THE BIG PICTURE TIMELINE

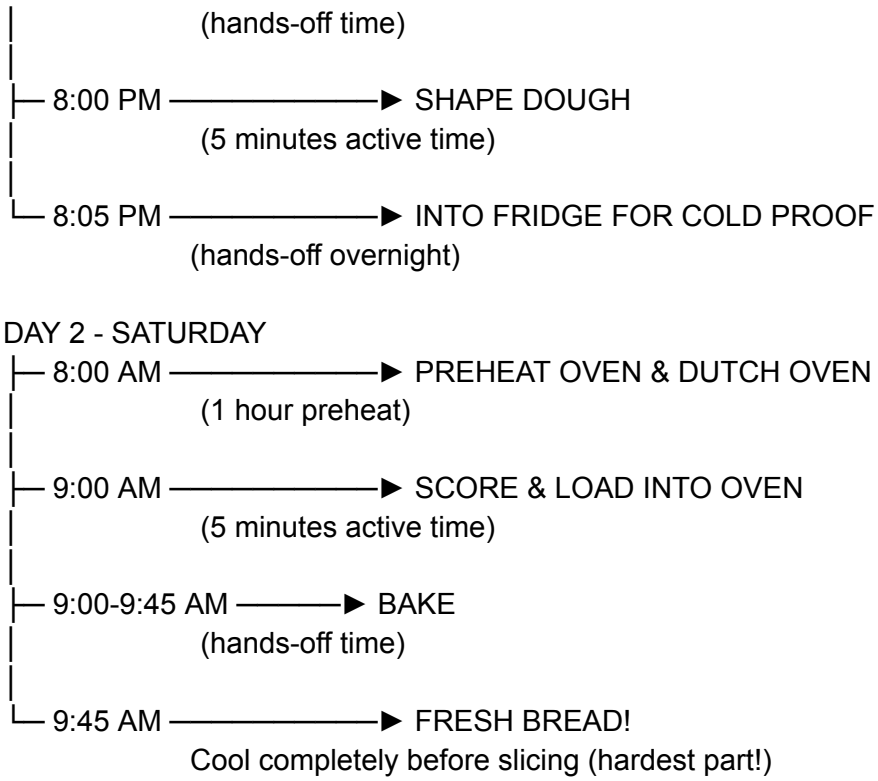
Your First Sourdough Loaf: Start to Finish

This section walks you through ONE complete bake from start to finish. Use this as your roadmap.

VISUAL TIMELINE

DAY 1 - FRIDAY

```
├─ 9:00 AM ──────────► FEED STARTER
│                (5 minutes active time)
│
├─ 3:00 PM ──────────► MIX DOUGH
│                (10 minutes active time)
│
├─ 3:10 PM ──────────► BULK FERMENTATION BEGINS
│                (hands-off time - dough rises)
│
├─ 3:40 PM ──────────► FOLD #1
│                (2 minutes active time)
│
├─ 4:10 PM ──────────► FOLD #2
│                (2 minutes active time)
│
├─ 4:40 PM ──────────► FOLD #3
│                (2 minutes active time)
│
├─ 5:10 PM ──────────► FOLD #4
│                (2 minutes active time)
│
├─ 5:10 PM-8:00 PM ──► CONTINUE BULK FERMENTATION
```



TOTAL TIME BREAKDOWN

Active Time (you're actually doing something):

- Day 1: ~30 minutes spread across 11 hours
- Day 2: ~5 minutes

Hands-Off Time (dough is doing its thing):

- Bulk fermentation: ~5 hours
- Cold proof: ~13 hours
- Baking: 45 minutes

TOTAL: About 35 minutes of work spread across 2 days

WHAT YOU'LL NEED FOR THIS BAKE

Ingredients:

- 50g active starter (you'll build this to 300g - see Section 4)

- 500g bread flour
- 350g water (room temperature)
- 10g salt

Equipment:

- Scale
- Large bowl
- Bowl cover
- Bench scraper
- Banneton or bowl + towel
- Dutch oven
- Parchment paper
- Lame or sharp knife

THE BASIC PRINCIPLE

Sourdough baking is a series of simple steps with waiting in between. You're not actively working for hours - you're doing 2-5 minute tasks spread across a day and a half.

The yeast does most of the work. You just create the right conditions and then get out of the way.

Ready? Let's bake.

PAGES 2-3: STEP-BY-STEP INSTRUCTIONS

STEP 1: FEED YOUR STARTER

Friday, 9:00 AM | Active time: 5 minutes

What you're doing: Waking up your starter and building enough active starter for your dough (300g).

How to do it:

1. Remove starter from fridge (if stored cold)
2. In a clean jar: Combine 30g ripe starter + 135g all-purpose flour + 135g water
3. Stir until no dry flour remains
4. Cover loosely (not airtight)

5. Leave at room temperature

What it should look like NOW: *[PHOTO: Just-mixed starter - looks like thick pancake batter, no bubbles yet]*

- Consistency of thick pancake batter
- Tan/beige color
- No bubbles yet - that's normal

What it should look like in 4-6 hours: *[PHOTO: Active, peaked starter - domed top, lots of bubbles]*

- Doubled in size
- Domed top
- Bubbles all over the surface
- Smells fresh and tangy

Set a timer for 6 hours from now (3:00 PM) to mix your dough.

STEP 2: MIX YOUR DOUGH

Friday, 3:00 PM | Active time: 10 minutes

Before you start: Make sure your starter is at peak (domed, bubbly, passes float test). If it's not ready yet, wait another hour.

What you're doing: Combining all ingredients into a shaggy dough.

How to do it:

1. In a large bowl, combine:
    - 300g active starter
    - 350g water (room temperature)
2. Stir together with your hand or a spoon
3. Add:
    - 500g bread flour
    - 10g salt
4. Mix with your hands until no dry flour remains
5. Dough will be shaggy and rough - that's perfect

What it should look like: *[PHOTO: Just-mixed dough - shaggy, rough, all flour incorporated]*

- Rough and shaggy
- No dry flour anywhere

- Sticky to the touch
- Doesn't look "like dough" yet - that's normal!

Don't worry about gluten development yet. That comes next.

Cover the bowl. Set a timer for 30 minutes.

STEP 3: DEVELOP GLUTEN (STRETCH & FOLD METHOD)

Friday, 3:30 PM - 5:10 PM | Active time: 2 minutes per fold, 4 folds total

What you're doing: Building gluten structure through a series of gentle folds.

How to do one set of folds:

1. Wet your hand (so dough doesn't stick)
2. Grab the dough from one side of the bowl
3. Stretch it up (gently!) about 6-8 inches
4. Fold it over to the center of the dough
5. Rotate bowl 90 degrees
6. Repeat 3 more times (one on each "side")
7. Flip dough over so smooth side is up
8. Cover bowl

[PHOTO SEQUENCE: Four photos showing grab, stretch, fold, rotate motion]

You'll do this 4 times, spaced 30 minutes apart:

- 3:30 PM - Fold #1
- 4:00 PM - Fold #2
- 4:30 PM - Fold #3
- 5:00 PM - Fold #4

What you should notice:

After Fold #1: *[PHOTO: Dough after first fold - still rough, but slightly smoother]*

- Dough is still pretty rough
- Starts to feel slightly smoother

After Fold #2: *[PHOTO: Dough getting smoother, more cohesive]*

- Dough is smoother
- Holds together better
- You might see some bubbles forming

After Fold #3: *[PHOTO: Dough looking smooth, bubbles visible]*

- Noticeably smoother surface
- More bubbles visible
- Dough has more structure

After Fold #4: DO THE WINDOWPANE TEST *[PHOTO: Windowpane test - thin translucent membrane of dough]*

Take a small piece of dough. Gently stretch it between your fingers. Can you stretch it thin enough to see light through it without it tearing?

✓ **YES - Passes:** You see a thin, translucent membrane → Gluten is developed!

✗ **NO - Fails:** It tears before getting translucent → Do one more fold in 30 minutes, test again

Once you pass the windowpane test, cover the bowl and let the dough begin bulk fermentation undisturbed.

STEP 4: BULK FERMENTATION

Friday, 5:00 PM - 8:00 PM | Active time: 0 minutes (just watching)

What you're doing: Letting the yeast ferment the dough, create gas, and develop flavor.

How to do it:

1. Cover the bowl
2. Place it in a warm spot (70-75°F is ideal)
3. Leave it alone
4. Check it after 3 hours

What to look for at the 3-hour mark (8:00 PM):

✓ **READY TO SHAPE when you see ALL of these:** *[PHOTO: Properly fermented dough - risen 50-75%, bubbly, jiggly]*

- Dough has risen **50-75%** in volume (NOT doubled - that's too much)
- Surface is domed and bubbly
- Dough jiggles when you move the bowl
- You can see bubbles through the side of the bowl (if it's glass)

DO THE POKE TEST: *[PHOTO: Finger poking dough, dough slowly springs halfway back]*

- Flour your finger

- Poke the dough ½ inch deep
- Watch what happens:
    - **Springs back slowly, leaves slight indent** → ✓ READY
    - **Springs back fast** → Not ready yet, wait 30-60 min, test again
    - **Doesn't spring back** → Overproofed, shape it anyway

If your kitchen is cooler (65-68°F), this might take 4-5 hours. If warmer (78-80°F), might only take 3-4 hours. Watch the dough, not just the clock.

STEP 5: SHAPE THE DOUGH

Friday, 8:00 PM | Active time: 5 minutes

What you're doing: Creating surface tension so your loaf holds its shape and rises up instead of spreading out.

How to do it:

Part A: Pre-shape

1. Lightly flour your work surface
2. Gently turn dough out of bowl onto surface (use bench scraper to help)
3. Fold the edges toward the center, working around in a circle
4. You're creating a rough round shape

[PHOTO: Dough turned out, folding edges to center]

5. Let it rest for 15 minutes (covered with a towel)

Part B: Final shape (Boule)

1. Lightly flour the top of the dough
2. Flip it over so the seam side (rough side) is down
3. Cup your hands around the dough
4. Using the friction between dough and counter, drag the dough toward you in small circular motions
5. Rotate and repeat
6. You're creating tension on the surface

[PHOTO SEQUENCE: Cupping dough, dragging toward you, rotating, final shaped boule with tight surface]

What it should look like: *[PHOTO: Final shaped boule - smooth, taut surface]*

- Smooth, taut surface
- Round shape
- Holds its form (doesn't immediately spread)

Part C: Into the banneton

1. Flour your banneton (or flour-lined bowl) HEAVILY
2. Pick up the dough with your bench scraper
3. Place it in the banneton seam-side UP (smooth side down)
4. Cover with a plastic bag or bowl cover

[PHOTO: Dough in banneton, seam side up]

Into the fridge it goes!

STEP 6: COLD PROOF (OVERNIGHT)

Friday, 8:05 PM - Saturday, 9:00 AM | Active time: 0 minutes

What you're doing: Final fermentation in the fridge. This develops flavor and makes the dough easier to score.

How to do it:

1. Place covered banneton in refrigerator
2. Walk away
3. Go to bed
4. Sleep soundly knowing your dough is slowly getting more delicious

Timing flexibility:

- Minimum: 12 hours (mild flavor)
- Sweet spot: 18-24 hours (good flavor, great oven spring)
- Maximum: 48 hours (very tangy)

For this bake, we're going 13 hours (8 PM to 9 AM).

STEP 7: PREHEAT OVEN

Saturday, 8:00 AM | Active time: 2 minutes

What you're doing: Getting your oven and Dutch oven screaming hot.

How to do it:

1. Place Dutch oven with lid in your oven
2. Set oven to 450°F
3. Let it preheat for a full hour
4. Don't rush this - you want that Dutch oven fully heated through

Why this matters:

- Hot Dutch oven = instant oven spring
- It creates a mini steam environment
- The thermal mass holds heat even when you open to load bread

Set a timer for 1 hour.

STEP 8: SCORE & LOAD

Saturday, 9:00 AM | Active time: 5 minutes

What you're doing: Scoring the dough (giving it a place to expand) and loading it into the hot Dutch oven.

How to do it:

Part A: Score the dough

1. Remove banneton from fridge
2. Cut a piece of parchment paper, place on counter
3. Flip banneton over onto parchment (dough is now smooth-side up)
4. Optional: Dust top lightly with flour for contrast

[PHOTO: Dough on parchment, smooth side up]

5. Using a lame or sharp knife, make one decisive cut:
    - Hold blade at 30-45 degree angle
    - Make a swift, confident cut about ½ inch deep
    - 4-5 inches long across the top

[PHOTO: Scoring the dough at an angle]

Simple beginner score: One long slash across the top. That's it.

Part B: Load into Dutch oven

1. **Carefully** remove hot Dutch oven from oven (use oven mitts!)

2. Remove lid
3. Using the parchment as a sling, lower dough into Dutch oven
4. Put lid back on
5. Place back in oven

[PHOTO: Lowering dough into Dutch oven using parchment]

CLOSE THE OVEN IMMEDIATELY

STEP 9: BAKE

Saturday, 9:00 AM - 9:45 AM | Active time: 0 minutes

What you're doing: The oven is doing all the work now.

How to do it:

Phase 1: Covered (20 minutes)

- Bake with lid ON for 20 minutes
- This traps steam, helps with oven spring
- DO NOT open the oven

Phase 2: Uncovered (20-25 minutes)

- After 20 minutes, remove lid
- Continue baking for another 20-25 minutes
- Bread should be deeply golden brown
- Internal temperature should be at least 200°F

[PHOTO: Bread after 20 minutes with lid on - pale, risen] [PHOTO: Bread after full bake - deep golden brown crust]

What you'll see:

- At 20 minutes: Bread is pale, has risen dramatically (oven spring!)
- At 40-45 minutes: Deep golden-brown crust, sounds hollow when tapped

Remove from oven. Turn out of Dutch oven onto a cooling rack.

STEP 10: COOL & SLICE

Saturday, 9:45 AM - 11:00+ AM | Active time: 0 minutes (but hardest step!)

What you're doing: Letting the bread finish cooking inside and the crumb set up.

How to do it:

1. Place bread on cooling rack
2. Walk away
3. DO NOT SLICE IT YET

Wait at least 1 hour. Preferably 2 hours.

[PHOTO: Beautiful golden loaf on cooling rack]

Why you have to wait:

- The inside is still cooking from residual heat
- Steam is still redistributing inside
- If you cut it too soon, the crumb will be gummy

After 1-2 hours: *[PHOTO: Perfect slice showing open, airy crumb]*

NOW you can slice it.

You did it. You made sourdough bread.

PAGES 4-5: FIRST BAKE CHECKLIST

YOUR FIRST BAKE CHECKLIST

Use this to stay on track during your bake

Print this page or keep the binder open to it. Check off each step as you go.

DAY 1: PREP & FERMENTATION

MORNING ☐ **Fed starter** (Time: _____ AM/PM)

- Used 30g starter + 135g flour + 135g water
- Covered and left at room temperature
- Set timer for 6 hours

AFTERNOON

☐ **Checked starter readiness** (Time: _____ PM)

- ☐ Doubled in size
- ☐ Domed top
- ☐ Bubbly surface
- ☐ Passes float test

☐ **Mixed dough** (Time: _____ PM)

- Weighed all ingredients
- Combined until no dry flour visible
- Covered bowl, set timer for 30 minutes

☐ **Fold #1** (Time: _____ PM)

- Grabbed, stretched, folded all 4 sides
- Dough feels: ☐ Shaggy ☐ Rough

☐ **Fold #2** (Time: _____ PM)

- Grabbed, stretched, folded all 4 sides
- Dough feels: ☐ Smoother ☐ More cohesive

☐ **Fold #3** (Time: _____ PM)

- Grabbed, stretched, folded all 4 sides
- Dough feels: ☐ Much smoother ☐ Seeing bubbles

☐ **Fold #4** (Time: _____ PM)

- Grabbed, stretched, folded all 4 sides
- **WINDOWPANE TEST:** ☐ Pass ☐ Fail
- If fail: Did extra fold at: _____ PM

EVENING ☐ **Bulk fermentation complete** (Time: _____ PM)

- Total bulk time: _____ hours
- Kitchen temperature: _____ °F
- ☐ Dough risen 50-75%
- ☐ Surface is bubbly and domed
- ☐ Jiggles when bowl is moved
- **POKE TEST:** ☐ Slow spring-back ☐ Fast spring-back ☐ No spring-back

☐ **Shaped dough** (Time: _____ PM)

- Pre-shaped and rested 15 minutes

- Final shaped into boule
- Surface tension: ☐ Good (tight) ☐ Okay ☐ Loose

☐ **Into banneton** (Time: _____ PM)

- Seam side up
- Heavily floured
- Covered

☐ **Into fridge for cold proof** (Time: _____ PM)

DAY 2: BAKE DAY

MORNING ☐ **Preheated oven with Dutch oven inside** (Time: _____ AM)

- Set to 450°F
- Started 1 hour before planned bake

☐ **Scored dough** (Time: _____ AM)

- Removed from fridge
- Flipped onto parchment
- Made score: ☐ One slash ☐ Other pattern: _____

☐ **Loaded into Dutch oven** (Time: _____ AM)

- Lowered on parchment sling
- Covered with lid
- Into oven immediately

☐ **Baked covered** (20 minutes)

- Lid stayed ON

☐ **Removed lid** (Time: _____ AM)

☐ **Baked uncovered** (20-25 more minutes)

- Final bake time: _____ minutes total
- Internal temp (if checked): _____ °F

☐ **Removed from oven** (Time: _____ AM)

- Crust color: ☐ Golden ☐ Deep brown ☐ Too dark ☐ Too pale
- Sounds hollow when tapped: ☐ Yes ☐ No

☐ **Cooled completely** (Time: _____ AM/PM)

- Waited at least 1 hour before slicing
- Actual wait time: _____ hours

POST-BAKE ASSESSMENT

OVERALL RESULT: ☐ Amazing! ☐ Pretty good! ☐ Edible ☐ Learning experience

CRUST: Color: ☐ Perfect ☐ Too light ☐ Too dark Texture: ☐ Crispy ☐ Chewy ☐ Too hard ☐ Too soft

CRUMB: Texture: ☐ Light & airy ☐ A bit dense ☐ Very dense ☐ Gummy Holes: ☐ Open, irregular ☐ Even, small ☐ Almost none

FLAVOR: ☐ Perfectly tangy ☐ Mild ☐ Too sour ☐ Not enough sour

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WHAT WENT WELL:

WHAT TO CHANGE FOR NEXT TIME:

NOTES & OBSERVATIONS:

Loaf #1 complete! Time to bake #2.

SECTION 4: STARTER DEEP DIVE

SECTION 4: STARTER DEEP DIVE

Color: Green tab

PAGE 1: CREATING & MAINTAINING YOUR STARTER

Your Sourdough Starter: Care & Feeding

Every loaf begins with a healthy, active starter. Here's everything you need to know.

WHAT IS A SOURDOUGH STARTER?

A sourdough starter is a live culture of wild yeast and beneficial bacteria living in a mixture of flour and water. Think of it as a pet that:

- Needs regular feeding
- Lives in your kitchen
- Makes delicious bread possible

What's in there?

- **Wild yeast:** Makes the dough rise (produces CO_2)
- **Lactic acid bacteria:** Creates tangy flavor and helps preserve the bread
- **Flour and water:** Food for the yeast and bacteria

Your starter is alive. Treat it well, feed it regularly, and it will work for you for years—even decades.

YOU ALREADY HAVE A STARTER

The starter you received from class is:

- Active and healthy
- The same culture we use at SLO Food Market
- Ready to use or ready to store

Your job now is to keep it alive and happy.

BASIC FEEDING INSTRUCTIONS

What "feeding" means: You're giving your starter fresh flour and water so the yeast and bacteria have food to eat. When they eat, they multiply and stay strong.

The basic ratio: 1:1:1

- 1 part starter
- 1 part flour (by weight)
- 1 part water (by weight)

Example:

- 50g starter
- 50g all-purpose flour
- 50g water (room temperature)

How to feed:

1. **Discard** most of your starter, keeping only the amount you need (usually 50g)
2. **Add** fresh flour and water in equal parts
3. **Stir** until fully combined (no dry flour)
4. **Cover** loosely (not airtight—it needs to breathe)
5. **Wait** for it to peak (4-6 hours at room temp)

WHY DO I HAVE TO DISCARD?

If you didn't discard, you'd be adding more and more flour and water each feeding. Within a week you'd have gallons of starter.

Discarding keeps the ratio balanced so your starter stays vigorous and healthy.

What to do with discard:

- Compost it
- Use it in pancakes, waffles, crackers, muffins (search "sourdough discard recipes")
- Give it to a friend who wants to start baking

Note: The "discard" isn't bad or dead—it's just excess. It can still be used for baking non-yeasted goods.

TWO WAYS TO MAINTAIN YOUR STARTER

OPTION 1: ROOM TEMPERATURE (For frequent bakers)

Best for: Baking 2-3+ times per week

How to maintain:

- Keep starter on your counter
- Feed once or twice daily
- Use 1:1:1 ratio

Feeding schedule:

- **Once daily:** Feed every 24 hours (same time each day)
- **Twice daily:** Feed every 12 hours (morning and night)

When to use this method: If you're baking multiple times a week, keeping your starter at room temperature means it's always ready to use. Just take what you need for your recipe and feed the remainder.

Temperature matters:

- Warm kitchen (75-80°F): Feed twice daily
- Cool kitchen (65-70°F): Once daily is fine

OPTION 2: REFRIGERATOR (For occasional bakers)

Best for: Baking once a week or less

How to maintain:

1. Feed your starter (1:1:1 or 1:5:5)
2. Let it sit at room temp for 1-2 hours (so it "wakes up" and starts fermenting)
3. Cover and put it in the fridge
4. Feed once a week

When you want to bake:

1. Remove from fridge the night before (or 12-16 hours before you need it)
2. Feed it (1:1:1)

3. Leave at room temperature until doubled and bubbly (4-8 hours)
4. Use what you need for your recipe
5. Feed the remainder and put it back in the fridge

This is our recommended method for beginners. It's low-maintenance and gives you flexibility.

FEEDING RATIOS EXPLAINED

The ratio you use determines how fast your starter will peak.

1:1:1 (Quick feeding)

- Example: 50g starter + 50g flour + 50g water = 150g total
- Peaks in: 4-6 hours (room temp, 70-75°F)
- Use when: You want to bake same day or next day

1:5:5 (Slow feeding)

- Example: 20g starter + 100g flour + 100g water = 220g total
- Peaks in: 8-12 hours (room temp)
- Use when: You want it ready in the morning, or you're going into the fridge

1:10:10 (Very slow feeding)

- Example: 10g starter + 100g flour + 100g water = 210g total
- Peaks in: 12-18 hours (room temp)
- Use when: Long cold storage, or you want maximum flexibility

More food (higher ratio) = slower fermentation

WATER TEMPERATURE MATTERS

Room temperature water (65-75°F): Standard for most feedings

Warm water (80-90°F): Speeds up fermentation

- Use in winter or cold kitchens
- Use when you want starter ready faster

Cool water (50-60°F): Slows down fermentation

- Use in summer or hot kitchens

- Use before refrigerating

Never use hot water (over 95°F) - you'll kill the yeast

WHAT FLOUR TO USE FOR FEEDING

All-Purpose Flour: Totally fine, economical, our recommendation for regular feedings

Bread Flour: Also works great, slightly higher protein

Whole Wheat or Rye: Makes a more active, vigorous starter but ferments faster and can taste more sour

Our recommendation: Feed with all-purpose flour. It's cheaper, consistent, and works beautifully.

You can bake with bread flour even if you feed with AP flour. The starter adapts.

PAGE 2: VISUAL GUIDE TO STARTER READINESS

Is My Starter Ready to Use?

Learn to read your starter at a glance

[This page would be laid out with three large photos side-by-side across the page, each taking up about 1/3 of the width]

❌ NOT READY: Underfed / Sluggish Starter

[LARGE PHOTO: Starter in jar, flat or only slightly risen, few bubbles, looks dense]

What you see:

- ☐ Little to no rise since last feeding
- ☐ Few bubbles on surface (or none)
- ☐ Dense, thick consistency
- ☐ May have a layer of liquid on top (hooch)

What you smell:

- Strong sour smell
- Acetone or nail-polish-remover smell
- Not fresh or yeasty

Float test result:

- ❌ **SINKS** immediately

What this means: The yeast has eaten all available food and is starving. The bacteria are dominating, creating too much acid.

What to do:

- Feed it again
- Wait for it to peak (4-6 hours)
- Test again before using

This starter will NOT make good bread right now.

⚠️ GETTING THERE: Needs Feeding Soon

[LARGE PHOTO: Starter with some rise, some bubbles, may have hooch on top]

What you see:

- ☐ Some rise (maybe 50%)
- ☐ Some bubbles, but not many
- ☐ May have liquid (hooch) on top
- ☐ Top may be starting to flatten

What you smell:

- Sour smell
- Not as fresh as you want

Float test result:

- ⚠️ **May float, may not** - inconsistent

What this means: Your starter peaked hours ago and is starting to decline. It's hungry. If you stored it in the fridge, this is totally normal.

What to do:

- If just fed: Wait longer (it hasn't peaked yet)
- If hours since feeding: Feed it again, wait for peak
- If from fridge: Feed it, let it come to room temp, wait for peak

Can you use it? Maybe, but you'll get better results if you wait for peak activity.

✓ READY: Peak Activity - BAKE NOW!

[LARGE PHOTO: Starter in jar, doubled in size, domed top, lots of bubbles all over surface]

What you see:

- ☐ **DOUBLED** in size (or close to it)
- ☐ **DOMED** top (not flat, not collapsed)
- ☐ **BUBBLES** all over the surface
- ☐ **Airy** and light appearance
- ☐ May have small "rivulets" or streams of fine bubbles

What you smell:

- **Fresh, tangy** smell
- **Yeasty** aroma
- **Pleasant** - you'd want to bake with it

Float test result:

- ✅ **FLOATS** easily on water

What this means: The yeast is at maximum activity. There's plenty of food, plenty of gas production, plenty of acidity for flavor. This starter is STRONG and will make your dough rise beautifully.

What to do: USE IT NOW (or within the next 1-2 hours)

This is what you're aiming for every time.

VISUAL TIMELINE: From Feeding to Peak

[Small diagram showing progression over time]

JUST FED	2 HOURS	4 HOURS	6 HOURS	8+ HOURS
(Flat, no bubbles)	(Small bubbles appearing)	(Doubled, PEAKED)	(Still peaked, use soon)	(Starting to collapse)

↑
BAKE HERE!

Most starters peak 4-6 hours after feeding at room temperature (70-75°F).

Warmer = faster (3-4 hours)
Cooler = slower (6-8 hours)

PAGE 3: FEEDING SCHEDULE REFERENCE TABLE

Starter Feeding Schedules

Choose the schedule that fits your baking frequency

BAKING FREQUENCY	STORAGE	FEEDING RATIO	FEEDING SCHEDULE	WHEN IT'S READY
Daily Baker (3-7x/week)	Counter (room temp)	1:1:1	Once or twice daily (every 12-24 hrs)	Always ready - just take what you need and feed the rest
Weekend Baker (1x/week)	Refrigerator	1:5:5	Once a week	Pull out 12-16 hrs before baking, feed, wait for peak
Occasional Baker (1-2x/month)	Refrigerator	1:10:10	Every 1-2 weeks	Pull out night before, may need 2 feedings to wake it up
Getting Ready to Bake	Counter	1:1:1	Night before baking	Feed 12-16 hours before you plan to mix dough

---

DETAILED SCHEDULES

SCHEDULE 1: DAILY ROOM TEMP (Frequent Baker)

For: Baking 3+ times per week

Method:

- Keep starter in a jar on your counter
- Feed once daily at the same time
- Always keep at least 50g starter after discarding

Daily routine:

1. Morning: Discard down to 50g
2. Add 50g flour + 50g water
3. Stir, cover loosely
4. Starter peaks 4-6 hours later
5. Use anytime after peak (within 6-8 hours)
6. Repeat tomorrow

When you bake:

- Take what your recipe needs (usually 300-500g)
- Feed the remaining 50g as usual
- Continue your daily routine

SCHEDULE 2: WEEKLY FRIDGE STORAGE (Weekend Baker)

For: Baking once a week

Weekly maintenance:

1. **Once a week** (e.g., every Sunday):
    - Remove from fridge
    - Discard down to 20g
    - Feed with 100g flour + 100g water (1:5:5 ratio)
    - Let sit at room temp for 1-2 hours
    - Put back in fridge

When you want to bake:

1. **Night before baking** (or 12-16 hours before):
    - Remove from fridge
    - Discard down to 50g
    - Feed with 50g flour + 50g water
    - Leave at room temp
    - Wait for peak (4-8 hours - may take longer if cold)

2. **When peaked:**
    - Build to amount needed for recipe (see Section 7)
    - Use in your dough
3. **After baking:**
    - Feed remaining starter (1:5:5)
    - Let sit 1-2 hours
    - Back in fridge

SCHEDULE 3: MONTHLY FRIDGE STORAGE (Occasional Baker)

For: Baking 1-2 times per month

Maintenance:

- Feed every 1-2 weeks minimum
- Use 1:10:10 ratio
- Can go up to 2 weeks without feeding (but not longer)

When you want to bake:

1. **Two nights before baking:**
    - Remove from fridge
    - Feed (1:1:1)
    - Let come to room temp overnight
2. **Next morning:**
    - Check if it doubled/peaked
    - If yes: Feed again, use this feeding for your bake
    - If no: Feed again, wait for peak, then feed once more
3. **Use the second active feeding** for your bread
4. After baking: Feed remainder, back to fridge

Note: Neglected starters take 2-3 feedings to "wake up" and become vigorous again.

SCHEDULE 4: BUILDING STARTER FOR A RECIPE

When: The night before you want to mix dough

If your starter is in the fridge:

1. **12-16 hours before mixing dough:**
    - Calculate how much ripe starter your recipe needs (e.g., 300g)
    - Use this formula:

    - Take 10% of recipe amount (30g) = starter to feed
    - Add 45% as flour (135g)
    - Add 45% as water (135g)
    - Total = 300g ripe starter
2. Mix thoroughly, cover, leave at room temp
3. Wait 12-16 hours until doubled and bubbly
4. Use in your recipe

If your starter is on the counter:

- Same process, but it will peak faster (4-6 hours)

[See Page 7 of this binder for the complete formula and examples for each recipe]

PAGE 4: STARTER TROUBLESHOOTING

Common Starter Problems & Solutions

Q: Is my starter dead?

Probably not. Starters are incredibly resilient.

Signs your starter is still alive:

- Any bubbles at all (even tiny ones)
- Any rise after feeding (even just 10-20%)
- Sour smell (not moldy smell)

Signs your starter might actually be dead:

- **Mold** (fuzzy growth, pink/orange/black spots)
- **No activity whatsoever** after 3-4 feedings
- **Putrid smell** (like rotting garbage, not just sour)

What to do:

1. If there's mold → Discard it, start over
2. If no mold but sluggish → Feed it daily for 3-5 days, it will revive
3. If truly dead → Contact us for a new starter

Bottom line: If you see any bubbles at all, it's alive. Keep feeding it.

Q: What is this liquid on top?

That's "hooch." It's alcohol produced by fermentation.

What it means: Your starter is hungry. It's eaten all available food and is now sitting in its own waste products (alcohol).

What to do:

- **Option 1:** Pour it off, then feed your starter
- **Option 2:** Stir it back in, then feed your starter
    - Stirring it in makes your starter slightly more sour
    - Pouring it off keeps it milder

Is it bad? No. It's just a sign to feed your starter more often or use a larger feeding ratio.

Color: Hooch can be clear, gray, or even dark brown. All normal.

Q: My starter smells like nail polish remover (acetone)

This is normal for a hungry starter.

Why it happens: When the starter runs out of food, the bacteria produce acetic acid (vinegar smell) and acetone. It's a stress response.

What to do:

1. Feed your starter
2. If on the counter: Feed more frequently (twice daily instead of once)
3. If in fridge: Feed with a higher ratio (1:5:5 or 1:10:10)

Will it affect my bread? If you use it when it smells like this, your bread will be very sour and the rise might be weak. Better to feed it and wait for it to peak.

Q: My starter isn't rising much after feeding

Possible causes:

1. Water too hot

- Killed the yeast

- Solution: Use room temp or lukewarm water (never over 90°F)

2. Too cold

- Fermentation is very slow
- Solution: Move to a warmer spot, wait longer (8-12 hours)

3. Needs more feedings

- If it's been in the fridge for weeks, it's sluggish
- Solution: Feed daily for 3-5 days to wake it up

4. Chlorine in tap water

- Some municipal water has lots of chlorine
- Solution: Let water sit out overnight before using, or use filtered water

5. Not enough time

- You're checking too soon
- Solution: Wait longer - it might take 8-12 hours in a cool kitchen

---

Q: Can I use whole wheat flour instead of white flour?

Yes! Whole wheat makes a very active, vigorous starter.

Things to know:

- Whole wheat ferments faster (more nutrients for yeast)
- Your starter will be thicker
- It will taste more sour
- It will smell stronger

Our recommendation:

- Feed with whole wheat if you want to
- Or do a 50/50 mix (half whole wheat, half all-purpose)
- You can switch back and forth - the starter adapts

Q: My starter has separated into layers

Totally normal if it's been sitting for a while.

What you see:

- Liquid on top (hooch)
- Thick paste in the middle
- Maybe some liquid at the bottom

What to do:

- Stir it all together
- Feed it
- It will come back together

Q: Can I freeze my starter?

Yes, but refrigeration is easier for regular storage.

When to freeze:

- Going on vacation for weeks/months
- Want a backup in case something happens to your main starter
- Want to give starter to a friend later

How to freeze:

1. Feed your starter, let it peak
2. Spread a thin layer on parchment paper
3. Let it dry completely (1-2 days)
4. Break into flakes, store in airtight container or freezer bag
5. Freeze

How to revive:

1. Take a tablespoon of dried starter flakes
2. Add 50g water, let it dissolve (a few hours)
3. Add 50g flour, mix
4. Feed daily for 3-5 days until vigorous

Easier method: Just refrigerate and feed weekly.

Q: I forgot to feed my starter for [X weeks]. Is it okay?

Probably yes.

Up to 2 weeks: Almost certainly fine. Feed it, wait for it to peak, feed it again. Should be good.

2-4 weeks: Likely fine. May need 3-4 feedings to wake up fully.

1-2 months: Might still be alive. Check for mold first. If no mold, try feeding it daily for a week.

3+ months: May or may not survive. Worth trying to revive, but you may need a fresh starter.

The record: People have revived starters left in the fridge for a year. Starters are tough.

Q: Should I name my starter?

Absolutely. This is scientifically proven to make better bread.*

Popular names:

- Doughy McDoughface
- Bread Pitt
- Gluten Tag
- The Yeast Beast
- Bubbles

What did you name yours? _____

---

*Not scientifically proven.

Q: Can I give my starter to a friend?

Yes! Sharing is encouraged.

How to share:

1. When your starter is at peak activity, scoop some into a small jar
2. Give your friend:
    - About 50g of active starter
    - Feeding instructions (or a copy of this binder!)
    - A jar to keep it in
3. They should feed it as soon as they get home

Your starter is now immortal - living in multiple kitchens.

STILL HAVE QUESTIONS?

Contact us:

- Email: [your email]
- Phone: [your phone]
- Visit us at SLO Food Market

We're here to help. Sourdough is a journey, and we want you to succeed.

[End of Section 4]

This section is meant to be comprehensive enough that students rarely need to look elsewhere for starter questions. The visual guide on page 2 is the most critical - those three photos side-by-side will do more for their success than pages of text.

SECTION 5: MIXING & GLUTEN DEVELOPMENT

SECTION 5: MIXING & GLUTEN DEVELOPMENT

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PAGE 1: UNDERSTANDING GLUTEN

What Is Gluten and Why Does It Matter?

The foundation of great bread is strong gluten. Here's what you need to know.

WHAT IS GLUTEN?

Gluten is a network of proteins that forms when you mix flour and water together and then work the dough.

Think of it like this:

- Flour contains two main proteins: **glutenin** and **gliadin**
- When you add water, these proteins start linking together
- When you knead, fold, or stretch the dough, they form long chains
- These chains tangle and cross-link, creating a web or net
- **This web is gluten**

WHY GLUTEN MATTERS

Gluten does three critical jobs in your bread:

1. TRAPS GAS *[Small illustration: Gluten strands forming a net with CO_2 bubbles trapped inside]*

The yeast in your starter produces carbon dioxide (CO_2). Gluten traps that gas in tiny pockets throughout the dough. Without gluten, the gas escapes and your dough stays flat.

Strong gluten = Gas stays trapped = Bread rises

---

2. GIVES STRUCTURE *[Small illustration: Side-by-side comparison of weak vs. strong dough structure]*

Gluten is what allows your dough to hold its shape. It gives the dough elasticity (springs back) and extensibility (stretches without tearing).

Good gluten development = Dough holds shape = Tall loaf Poor gluten development = Dough spreads out = Flat loaf

---

3. CREATES TEXTURE

Gluten determines the texture of your crumb:

- Well-developed gluten = Open, airy crumb with irregular holes
- Underdeveloped gluten = Dense, tight crumb
- That chewy texture you love in good bread? That's gluten.

MIXING vs. DEVELOPING

These are NOT the same thing.

MIXING = Combining ingredients

- Takes 1-2 minutes
- Goal: Get all flour hydrated, no dry spots
- Dough is rough and shaggy
- This is just the starting point

[Photo: Just-mixed dough - shaggy, rough, barely holding together]

DEVELOPING = Building gluten structure

- Takes 10 minutes (active kneading) OR several hours (with periodic folds)
- Goal: Create strong gluten network
- Dough becomes smooth, elastic, cohesive
- This is what makes bread possible

[Photo: Fully developed dough - smooth, elastic, bounces back when poked]

HOW GLUTEN DEVELOPS

Gluten develops through:

1. Hydration When flour meets water, the proteins start to unwind and align. This is why we let dough rest after mixing (autolyse).

2. Mechanical action Kneading, folding, stretching - any movement that aligns and tangles the protein chains.

3. Time Even without touching it, gluten develops slowly over time during fermentation. The dough moves and stretches itself as gas builds up inside.

THE THREE STAGES OF GLUTEN DEVELOPMENT

STAGE 1: Undermixed

- Shaggy, rough texture
- Tears easily when stretched
- No elasticity

→ *Bread will be dense, won't hold shape*

STAGE 2: Partial Development

- Smoother but still some rough spots
- Stretches a bit before tearing
- Some elasticity

→ *Bread will be okay but not optimal*

STAGE 3: Full Development

- Smooth, cohesive dough
- Stretches thin without tearing
- Strong elasticity and structure

→ Bread will have great rise and texture

HOW DO YOU KNOW WHEN YOU'RE DONE?

The Windowpane Test

This is your #1 tool for checking gluten development. It's simple, fast, and never lies.

We'll show you exactly how to do it on the next page.

KEY TAKEAWAYS

✓ Gluten = protein network that traps gas and gives structure

✓ Mixing ≠ Developing (mixing is fast, development takes time and work)

✓ You need FULL gluten development for good sourdough

✓ The windowpane test tells you when you're done

PAGE 2: THE WINDOWPANE TEST - YOUR BEST TOOL

Master This Test, Master Your Dough

WHAT IS THE WINDOWPANE TEST?

The windowpane test tells you if your gluten is fully developed by checking if you can stretch the dough thin enough to see light through it—like a windowpane.

If you can make a thin, translucent membrane → Gluten is developed ✓ If it tears before getting thin → Keep working the dough ✗

It's that simple.

HOW TO PERFORM THE TEST

Step 1: Take a small piece of dough (golf ball size)

Step 2: Wet your hands slightly (so dough doesn't stick)

Step 3: Gently stretch the dough between your fingers and thumbs

Step 4: Keep stretching slowly and carefully, making it thinner and thinner

Step 5: Hold it up to the light

VISUAL GUIDE: THREE OUTCOMES

[This would be laid out as three large photos across the page]

❌ FAIL: Undermixed

[PHOTO: Dough being stretched, tears immediately, thick and rough]

What you see:

- Dough tears as soon as you start stretching
- Can barely stretch it at all
- Texture is rough and shaggy
- No translucency - it's thick and opaque

What this means: Gluten network hasn't formed yet. Proteins haven't linked together.

What to do:

- Keep folding/kneading
- Test again in 30 minutes (if using stretch & fold method)
- Test again in 3-5 minutes (if kneading actively)

⚠️ PARTIAL: Getting There

[PHOTO: Dough stretched thin-ish but tearing before truly translucent]

What you see:

- Dough stretches more than before
- Gets somewhat thin
- But tears before you can see light through it clearly
- Some areas might be translucent, others tear

What this means: Gluten is forming but not complete. You're halfway there.

What to do:

- Keep working the dough
- Test again in 30 minutes (stretch & fold)
- Test again in 2-3 minutes (active kneading)

✓ PASS: Fully Developed

[PHOTO: Dough stretched very thin, light clearly visible through it, translucent membrane]

What you see:

- Dough stretches VERY thin
- You can see light through it
- It looks like a translucent membrane or windowpane
- Doesn't tear even when stretched this thin
- Might see faint lines (that's the gluten strands - good!)

What this means: Gluten network is fully formed. Strong protein chains are aligned and cross-linked throughout the dough.

What to do: ✓ STOP MIXING. Your dough is ready for bulk fermentation.

TECHNIQUE TIPS

Be gentle: Don't force it. Stretch slowly and carefully. You're testing the dough's strength, not trying to rip it apart.

Use enough dough: A piece too small is hard to stretch properly. Golf ball size is about right.

Wet your hands: Keeps dough from sticking to your fingers so you can stretch it properly.

Look for the overall structure: A few small tears are okay. What matters is whether the dough can form a thin membrane overall.

WHEN TO TEST

Using stretch & fold method:

- Test after your 3rd or 4th fold
- If it fails, do another fold and test again in 30 minutes

Using active kneading:

- Test after 5 minutes of kneading
- If it fails, knead another 3-5 minutes and test again

Using a stand mixer:

- Test after 3-4 minutes on low speed
- If it fails, mix another 2 minutes and test again

COMMON QUESTIONS

Q: What if it passes in some spots but tears in others? A: Keep working it. You want consistent strength throughout.

Q: Can I overdo it? A: With hand mixing, almost impossible. With a stand mixer, yes - if you mix too long (10+ minutes) the dough can break down.

Q: My dough is really wet and sticky - can I still test? A: Yes! High-hydration doughs are stickier but should still pass the test. Wet your hands more.

Q: Does whole wheat dough pass the windowpane test? A: Sort of. Whole wheat has bran that cuts gluten strands, so it won't be as translucent. But you should still see good stretch and structure.

THIS TEST IS YOUR FRIEND

Forget watching the clock.
Forget counting folds.
Do the windowpane test.

It tells you exactly when your dough is ready, every single time, regardless of temperature, humidity, flour type, or anything else.

Master this test, and you'll never wonder "is my dough mixed enough?" again.

PAGE 3: MIXING METHODS

Four Ways to Develop Gluten

Choose the method that fits your style and schedule

METHOD 1: STRETCH & FOLD ⭐ RECOMMENDED FOR BEGINNERS

Best for: Hands-off approach, high-hydration doughs, beginners

Time required: 3-4 sets of folds over 2-3 hours

Effort level: Very low - about 2 minutes every 30 minutes

HOW IT WORKS:

Instead of kneading continuously, you do short bursts of gentle folding over several hours. Time and fermentation do most of the gluten development for you.

STEP-BY-STEP:

[Four sequential photos showing the folding motion]

1. Wet your hand (so dough doesn't stick)

2. Grab one edge of the dough from the side of the bowl

3. Stretch it up gently (about 6-8 inches) and fold it over to the center

4. Rotate the bowl 90 degrees and repeat

5. Do this 4 times (once on each "side" of the dough)

6. Flip the dough over so the smooth side is facing up

7. Cover the bowl and wait 30 minutes

8. Repeat - Do 3-4 total sets of folds

SCHEDULE:

3:00 PM - Mix dough (shaggy, rough)
3:30 PM - Fold set #1
4:00 PM - Fold set #2
4:30 PM - Fold set #3
5:00 PM - Fold set #4 (should pass windowpane test)
5:00 PM onwards - Bulk fermentation (no more folds)

WHAT YOU'LL NOTICE:

- **After fold #1:** Dough is still rough but slightly smoother
- **After fold #2:** Dough is more cohesive, some bubbles visible
- **After fold #3:** Dough is smooth, elastic, holds together well
- **After fold #4:** Dough is strong, bouncy, passes windowpane test

---

WHY WE RECOMMEND THIS:

✓ Gentle on the dough - preserves air bubbles
✓ Easy - no continuous effort required
✓ Works great for wet, sticky doughs
✓ You can do other things between folds
✓ Hard to mess up

METHOD 2: SLAP & FOLD (FRENCH KNEADING)

Best for: Fast gluten development, when you want to be done quickly

Time required: 5-8 minutes of continuous work

Effort level: Medium-high - it's a workout

HOW IT WORKS:

You pick up the dough, slap it on the counter, fold it over itself, and repeat rapidly. The force and motion develop gluten quickly.

STEP-BY-STEP:

[Four sequential photos showing the slap and fold motion]

1. Scrape dough onto clean counter (no flour)

2. Scoop dough up with both hands from underneath

3. Lift it up to waist height

4. Slap it down on the counter (let the far edge hit first)

5. Use momentum to fold the near edge over the top

6. Rotate 90 degrees

7. Repeat rapidly for 5-8 minutes

8. Stop when dough is smooth and passes windowpane test

WHAT YOU'LL NOTICE:

- **First 2 minutes:** Dough is sticky, messy, wants to stick to your hands
- **3-4 minutes:** Dough starts to smooth out, becomes more cohesive
- **5-8 minutes:** Dough is smooth, elastic, stops sticking, bounces back

---

TIPS:

- Keep your hands slightly wet
- Work on a clean counter (no flour - you want friction)
- Don't worry if it's messy at first - it will come together
- Use a bench scraper to clean up between rounds

WHY USE THIS:

✓ Fast - done in under 10 minutes
✓ Satisfying - you can feel the dough transform
✓ Great workout

Why NOT to use this:

✗ Messy, especially at first
✗ Tiring on your arms
✗ Can be intimidating for beginners

METHOD 3: COIL FOLDS

Best for: Very wet doughs, gentle handling, preserving structure

Time required: 3-4 sets over 2-3 hours

Effort level: Very low

HOW IT WORKS:

Similar to stretch & fold, but even gentler. You lift the dough from the center and let the edges fold under themselves.

STEP-BY-STEP:

[Four sequential photos showing coil fold motion]

1. Wet both hands

2. Slide both hands under the center of the dough

3. Lift straight up - the dough stretches and the ends fall down

4. Let the ends "coil" underneath as you lower the dough back down

5. Rotate bowl 90 degrees

6. Repeat (lift, coil under, rotate)

7. Do this twice (so dough is coiled on all four sides)

8. Cover and wait 30 minutes

9. Repeat - Do 3-4 total sets

WHY USE THIS:

✓ Extremely gentle - great for very open crumb
✓ Works with sticky, wet doughs
✓ Doesn't deflate the dough at all

When to use: When your dough is 75%+ hydration (very wet) or when you want maximum airiness.

METHOD 4: TRADITIONAL KNEADING

Best for: Lower hydration doughs, if you like a classic approach

Time required: 8-12 minutes of continuous kneading

Effort level: High - it's physical work

HOW IT WORKS:

The classic bread-kneading method. Push, fold, turn, repeat.

STEP-BY-STEP:

[Four photos showing kneading motion]

1. Place dough on lightly floured counter

2. Push dough away from you with the heels of your hands

3. Fold the dough back over itself

4. Rotate 90 degrees

5. Repeat continuously for 8-12 minutes

6. Test with windowpane - keep going until it passes

WHAT YOU'LL NOTICE:

- **First 3 minutes:** Dough is rough, stiff, fights you
- **5-7 minutes:** Dough softens, becomes smoother
- **8-12 minutes:** Dough is silky, elastic, bounces back quickly

---

WHY USE THIS:

✓ Classic, satisfying
✓ Works well for drier doughs
✓ You're in full control

Why NOT to use this:

✗ Tiring
✗ Doesn't work as well for wet sourdough
✗ Takes sustained effort

WHICH METHOD SHOULD YOU USE?

For your first 5-10 loaves: → **Stretch & Fold**

It's forgiving, effective, and lets you multitask.

Once you're comfortable: → Try **Slap & Fold** for a faster option
→ Try **Coil Folds** for very wet doughs

Traditional Kneading: → Use if you're making lower-hydration sandwich bread or if you just love kneading

---

THE BOTTOM LINE

It doesn't matter which method you use.

What matters is: **Does your dough pass the windowpane test?**

If yes → Gluten is developed → You're ready to ferment
If no → Keep going → Test again

The method is just a tool. The windowpane test is the goal.

PAGE 4: COMMON MIXING PROBLEMS

Troubleshooting Your Mix

PROBLEM 1: Dough Is Too Sticky

[Photo: Very wet, sticky dough clinging to hands and bowl]

What it looks like:

- Sticks to your hands badly
- More like batter than dough
- Impossible to shape or work with
- Spreads out immediately

Possible causes:

1. Too much water

- You added more water than the recipe called for
- Different flour absorbs different amounts

2. Not enough mixing/gluten development

- Even properly hydrated dough feels sticky before gluten develops
- After development, it should feel less sticky (still tacky, but manageable)

3. Very high hydration recipe

- Some recipes are 75-80% hydration and will always be sticky
- This is normal for those recipes

SOLUTIONS:

If too much water:

- Add flour 10g at a time
- Mix thoroughly between additions
- Stop when dough is workable

If underdeveloped:

- Keep folding/kneading

- Gluten development will make it less sticky
- Don't add flour yet - give it time

If correct for recipe:

- Accept that it's supposed to be sticky
- Keep your hands wet when working with it
- Use a bench scraper to handle it

PROBLEM 2: Dough Is Too Stiff

[Photo: Dry, stiff dough that's hard to work, might have cracks]

What it looks like:

- Hard to mix - feels like it needs more water
- Doesn't stretch - just tears
- Dry looking, might have surface cracks
- Feels tight and resistant

Possible causes:

1. Not enough water

- You measured wrong or didn't add all the water

2. Flour absorbed more water than expected

- Whole wheat flour absorbs more
- Old flour or very dry flour

3. Too much flour

- You added extra while kneading

SOLUTIONS:

Add water gradually:

- Add 10-15g water at a time
- Mix thoroughly
- Let it hydrate for 5 minutes
- Check again

- Repeat if needed

Better approach:

- Mix all ingredients first
- Let rest 15-20 minutes (autolyse)
- THEN decide if it needs more water
- Flour absorbs slowly - give it time

PROBLEM 3: Dough Won't Come Together

[Photo: Shaggy dough that won't form a cohesive mass]

What it looks like:

- Looks like a mess of flour and water
- Won't form a ball
- Dry patches and wet patches
- Feels like something is wrong

Possible causes:

1. Not mixed long enough

- You gave up too soon

2. Flour and water aren't incorporated

- There are still dry pockets

3. Water too cold

- Very cold water slows down hydration

SOLUTIONS:

Keep mixing:

- Use your hands, squeeze the dough
- It WILL come together eventually
- Be patient - this takes a few minutes

Check for dry flour:

- Scrape bottom and sides of bowl
- Mix in any dry flour pockets

Let it rest:

- Stop trying to force it
- Cover it and wait 20 minutes
- Come back - it will be easier to work with

PROBLEM 4: Windowpane Test Never Passes

[Photo: Dough that keeps tearing when stretched]

What it looks like:

- You've been folding/kneading for a long time
- Dough still tears when stretched
- Not getting smoother or stronger

Possible causes:

1. Whole wheat or rye in the recipe

- Bran cuts gluten strands
- Won't get as translucent as white flour

2. Overfermented

- If bulk fermentation started before gluten fully developed
- Acid breaks down gluten

3. Over-mixed (if using stand mixer)

- The gluten broke down from too much mixing
- Dough may look shiny and wet

4. Incorrect flour

- Cake flour, pastry flour = low protein = won't develop strong gluten

---

SOLUTIONS:

Whole grain dough:

- It won't be as translucent - that's normal
- Look for good stretch and resistance instead of perfect windowpane

Overfermented:

- Shape it and bake it
- Next time, develop gluten BEFORE bulk fermentation gets too far

Over-mixed:

- Shape it and bake it
- Next time, mix less (don't exceed 5-7 min in stand mixer)

Wrong flour:

- Add bread flour to fix this batch
- Buy bread flour for next time

PROBLEM 5: Dough Feels Different Than Expected

You've read recipes, watched videos, but your dough doesn't feel like theirs

THIS IS NORMAL.

Why dough varies:

- Different flour brands absorb water differently
- Humidity affects hydration
- Temperature affects how dough feels
- Your hands are different from the baker in the video

WHAT TO TRUST:

✓ **The windowpane test** - objective, never lies
✓ **Volume increase during bulk** - you can see it
✓ **Poke test** - tactile and reliable

What NOT to trust:

✗ "The dough should feel like an earlobe"
✗ "It should be smooth as a baby's bottom"
✗ "Dough should be tacky but not sticky"

These descriptions are subjective. Everyone's earlobe feels different.

Use objective tests, not feel-good descriptions.

GENERAL TROUBLESHOOTING APPROACH

1. Start with the recipe amounts exactly

- Don't adjust on your first try

2. Mix thoroughly

- Ensure all flour is hydrated

3. Let it rest 20 minutes after mixing

- Dough will relax and hydrate fully

4. THEN decide if you need adjustments

- Add water or flour only if truly needed

5. Keep developing gluten until windowpane test passes

- Don't quit early

6. Trust the process

- Your first few doughs might feel weird - that's learning

YOU'LL GET A FEEL FOR IT

By your 3rd or 4th loaf, you'll start to develop intuition for:

- What properly hydrated dough feels like
- How much stretch indicates good gluten
- When the windowpane test will pass

But until then: Follow the recipe, do the tests, trust the process.

Your hands will learn. Give them time.

[End of Section 5]

This section should give students both the theory (why gluten matters) and the practical skills (how to develop it and test it). The windowpane test page is the most critical - that single skill will transform their baking.

SECTION 6: FERMENTATION VISUAL GUIDE

SECTION 6: FERMENTATION VISUAL GUIDE

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PAGE 1: UNDERSTANDING FERMENTATION

What's Happening Inside Your Dough

Fermentation is where the magic happens - and where most beginners get confused

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WHAT IS FERMENTATION?

Fermentation is the process where yeast and bacteria in your starter eat the sugars in flour and produce:

Carbon dioxide (CO_2) → Makes dough rise **Acids (lactic & acetic)** → Creates sour flavor **Alcohol & other compounds** → Adds complexity and aroma

Think of fermentation as: Your dough slowly inflating like a balloon while developing flavor.

TWO STAGES OF FERMENTATION

STAGE 1: BULK FERMENTATION

When: After mixing and gluten development, before shaping

Where: In a bowl, as one big mass

How long: Usually 4-6 hours at room temperature (varies by temperature)

What's happening:

- Yeast is multiplying and producing CO_2

- Gluten network is trapping that gas
- Dough is expanding and becoming airy
- Flavor is developing
- Acids are building (but also helping structure)

Goal: Get to 50-75% volume increase with good structure and airiness

This is the MOST CRITICAL stage. Get bulk right, and the rest is easy. Get bulk wrong, and your bread will struggle.

STAGE 2: FINAL FERMENTATION (PROOF)

When: After shaping, before baking

Where: In a banneton or bowl, as a shaped loaf

How long:

- Room temp: 2-4 hours
- Cold (fridge): 12-48 hours (our recommendation)

What's happening:

- Final rise of your shaped loaf
- Developing flavor (especially in cold proof)
- Preparing for oven spring

Goal: Dough that's puffy and relaxed, ready to explode with oven spring in the hot oven

---

BULK VS. PROOF: WHAT'S THE DIFFERENCE?

BULK FERMENTATION:

- Happens BEFORE shaping
- Dough is in a mass, still formless
- You want 50-75% rise (NOT doubled - that's too much)
- Most of the flavor development happens here
- Most of the rise happens here
- Timing is critical - this is where beginners mess up

FINAL PROOF:

- Happens AFTER shaping

- Dough is in its final shape
- You want the dough puffy but still with some spring
- Additional flavor, especially if cold proofing
- Less critical timing (cold proof is very forgiving)

WHY BULK FERMENTATION IS CRITICAL

If you undershoot bulk (don't ferment enough):

- Dough is tight and dense
- Won't rise much in oven
- Crumb will be tight, gummy
- Flavor won't be developed

If you nail bulk fermentation:

- Dough is light, airy, full of bubbles
- Will have great oven spring
- Crumb will be open and irregular
- Flavor will be complex and delicious

If you overshoot bulk (ferment too long):

- Dough becomes slack and weak
- Won't hold shape
- Will spread instead of rise
- Might taste TOO sour
- Crumb will be gummy with giant holes and dense spots

The window of "perfect" is about 1-2 hours. You need to learn to recognize it.

THE THREE VARIABLES THAT AFFECT FERMENTATION

1. TEMPERATURE (biggest factor)

- Warmer = Faster fermentation
- Cooler = Slower fermentation
- Every 5°F makes a significant difference

2. STARTER STRENGTH

- Vigorous, active starter = Faster fermentation

- Sluggish starter = Slower fermentation

3. FLOUR TYPE

- Whole grains = Faster fermentation (more food for yeast)
- White flour = Standard fermentation
- Higher protein flour = Can handle longer fermentation

HOW TO KNOW WHEN FERMENTATION IS DONE

Don't rely on time alone. Time is a guideline, but your dough doesn't know what the clock says.

Use your senses:

- ✓ **Visual:** Volume increase, bubbles, dome
- ✓ **Touch:** Poke test
- ✓ **Movement:** Does it jiggle?

We'll teach you exactly what to look for on the next pages.

PAGE 2: BULK FERMENTATION VISUAL GUIDE

The Three Stages: Learn to Recognize Them

This is the most important page in the entire binder

[This page would be laid out with THREE LARGE PHOTOS taking up most of the page, side-by-side-by-side. Each photo shows dough in a clear bowl so you can see volume and bubble structure. These photos are worth more than 1000 words.]

❌ STAGE 1: UNDERFERMENTED - Not Ready Yet

[LARGE PHOTO: Dough in bowl, only risen about 25-30%, few bubbles visible, looks dense]

VISUAL CUES:

Volume:

- Only risen 25-30% (barely at all)
- Doesn't look much bigger than when you started

Surface:

- Relatively flat or slightly domed
- Few bubbles on top (maybe none)
- Looks dense and compact

Through the bowl:

- (If using glass bowl) Few bubbles visible
- Dough looks tight

Movement:

- Doesn't jiggle much when you move the bowl
- Feels firm

POKE TEST: *[Small photo: Finger poking dough, dough springs back FAST within 1-2 seconds]*

Result: Springs back quickly and completely **What it means:** Too much tension, not relaxed enough

---

WHAT'S HAPPENING:

- Yeast hasn't had enough time to produce CO_2
- Not enough gas trapped in gluten network
- Gluten is still tight and hasn't relaxed

WHAT TO DO: → WAIT LONGER

- Check again in 1 hour
- Be patient

If you shape and bake now:

- Bread will be DENSE
- Tight, gummy crumb

- Won't rise much in oven
- Flavor won't be developed

✓ STAGE 2: PROPERLY FERMENTED - Perfect!

[LARGE PHOTO: Dough in bowl, risen 50-75%, domed top, lots of bubbles visible on surface and through bowl, looks airy and alive]

VISUAL CUES:

Volume:

- Risen 50-75% (NOT doubled - that's too far!)
- Noticeably bigger than when started
- Looks puffy and full of air

Surface:

- Clearly domed (not flat)
- Bubbles all over the surface
- Might see some "rivulets" (streams of fine bubbles)
- Surface looks active and alive

Through the bowl:

- (If glass bowl) Can see bubbles throughout
- Mix of small and medium bubbles
- Dough looks airy, not dense

Movement:

- JIGGLES when you move the bowl
- Looks like Jell-O - soft and wobbly
- This jiggle is the best indicator

POKE TEST: *[Small photo: Finger poking dough, indent springs back SLOWLY, leaves slight impression]*

Result: Springs back slowly (takes 3-5 seconds), comes back about halfway, leaves a slight indent **What it means:** Perfect balance of structure and relaxation

---

SMELL:

- Pleasant, tangy aroma
- Slightly acidic but not harsh
- Smells like bread dough should smell

WHAT'S HAPPENING:

- Yeast has produced lots of CO_2
- Gluten has trapped it in thousands of tiny pockets
- Dough has expanded significantly
- Gluten has relaxed enough to be workable
- Perfect balance

WHAT TO DO: → ✓ SHAPE IT NOW

- This is your window
- You have about 1-2 hours before you go past this stage
- Don't wait too long

If you shape and bake now:

- Great oven spring
- Open, airy crumb with irregular holes
- Good flavor, nice tang
- Beautiful bread

❌ STAGE 3: OVERFERMENTED - Too Far

[LARGE PHOTO: Dough in bowl, may have collapsed or flattened, very large irregular bubbles, looks slack and almost wet, might have liquid pooling]

VISUAL CUES:

Volume:

- May have risen high but then started collapsing

- Top is flat or even concave (sunken)
- Might look like it's deflating

Surface:

- Not domed anymore - flat or collapsed
- Very large, irregular bubbles
- May look wet or shiny
- Might have liquid (hooch) pooling

Through the bowl:

- Giant holes mixed with dense areas
- Uneven bubble structure
- Looks broken down

Movement:

- Moves loosely, almost like thick batter
- No structure

POKE TEST: *[Small photo: Finger poking dough, indent STAYS, no spring back at all]*

Result: Finger goes in, hole stays there, zero spring-back **What it means:** Gluten has broken down, structure is weak

---

SMELL:

- Very sour, almost harsh
- Might smell boozy or like strong vinegar
- Alcoholic aroma
- Not pleasant anymore

WHAT'S HAPPENING:

- Yeast has eaten all available food
- Started breaking down the gluten structure
- Excess acid has weakened the dough
- Gas bubbles have merged into huge holes
- Structure is compromised

WHAT TO DO: → Shape it anyway and learn for next time

- It won't be your best loaf, but it's still bakeable
- Don't throw it away

If you bake this:

- Little to no oven spring
- Gummy crumb
- Giant holes mixed with super dense areas
- Very sour flavor (probably too sour)
- Flat loaf that spreads instead of rises
- Still edible, just not great

Next time:

- Check your dough earlier
- Watch for that 50-75% rise
- Trust the poke test
- Don't let it go this far

PAGE 3: THE POKE TEST - YOUR BEST TOOL

Master This Test, Never Guess Again

WHAT IS THE POKE TEST?

The poke test tells you if fermentation is done by showing you how much tension/relaxation is in the dough.

- **Too much tension** (springs back fast) = underfermented
- **Good balance** (springs back slowly) = perfect
- **No tension** (doesn't spring back) = overfermented

It works for both bulk fermentation AND final proof.

HOW TO DO THE POKE TEST

STEP 1: Flour your finger *[Photo: Finger being dipped in flour]*

Why? So your finger doesn't stick to the dough and give you a false reading.

STEP 2: Poke the dough firmly *[Photo: Finger poking dough about ½ inch deep]*

- Press down about ½ inch deep
- Use steady, firm pressure
- Not gentle, not aggressive - just firm

STEP 3: Remove your finger and watch *[Photo sequence showing the three outcomes]*

Now watch what the dough does:

THREE OUTCOMES

OUTCOME 1: SPRINGS BACK FAST ❌

[Photo: Indent filling back in quickly within 1-2 seconds]

What you see:

- Hole fills back in almost immediately
- Within 1-2 seconds, indent is mostly or completely gone
- Dough bounces back strongly

What it means:

- Too much tension
- Gluten is still tight
- NOT READY YET

What to do:

- **During bulk:** Wait 30-60 more minutes, test again
- **During proof:** Let it proof longer

OUTCOME 2: SPRINGS BACK SLOWLY ✓

[Photo: Indent slowly filling back in, coming back about halfway, slight impression remains]

What you see:

- Hole starts to fill back in slowly
- Takes 3-5 seconds
- Comes back about halfway
- Leaves a slight indent - doesn't fully disappear

What it means:

- Perfect balance of tension and relaxation
- Gluten is relaxed but still has strength
- **READY!**

What to do:

- **During bulk:** Shape it now
- **During proof:** Bake it now (or soon)

This is what you're looking for.

OUTCOME 3: DOESN'T SPRING BACK ❌

[Photo: Indent stays, hole remains, no spring back at all]

What you see:

- Hole just stays there
- Zero spring-back
- Indent remains completely
- Dough might even look a little collapsed

What it means:

- Gluten has broken down
- Structure is weak
- OVERFERMENTED

What to do:

- **During bulk:** Shape it immediately and bake - don't wait longer
- **During proof:** Bake it now
- Learn from it for next time

Overfermented dough can still be baked, it just won't be optimal.

TIPS FOR ACCURATE POKE TESTS

Location matters:

- Poke in the center or slightly off-center
- Don't poke right on the edge

Depth matters:

- Go about ½ inch deep
- Not too shallow (won't get accurate reading)
- Not too deep (you're not trying to deflate it)

Watch carefully:

- Really observe what the dough does
- Timing matters (1 second vs. 5 seconds is the difference)

When in doubt, compare:

- Do two pokes in different spots
- Does it behave consistently?

POKE TEST FOR BULK VS. PROOF

The test is the same, but timing is different:

DURING BULK FERMENTATION:

- Test when dough looks 50-75% risen
- Usually test once or twice during bulk
- Trust the poke test more than the clock

DURING FINAL PROOF (Room temp):

- Test when dough looks puffy
- Usually 2-4 hours after shaping
- Slow spring-back = ready to bake

DURING COLD PROOF:

- Test right after removing from fridge
- Cold dough is stiffer, so spring-back might be faster - that's okay
- You can bake slightly underproofed from cold - you'll get great oven spring

---

COMMON QUESTIONS

Q: What if one spot passes the test but another doesn't? A: Use the reading from the center of the dough. Edges are always a bit different.

Q: What if I'm not sure if it sprang back halfway or more than halfway? A: When in doubt during bulk, wait another 30 minutes. Better to be slightly over than under.

Q: Can I do multiple poke tests? A: Yes, but don't do it 10 times - you're deflating the dough. 1-2 tests is enough.

Q: Does the poke test work for whole wheat dough? A: Yes, same principles apply.

Q: My dough is really wet and sticky - can I still poke it? A: Yes! Flour your finger really well. The test still works.

TRUST THE POKE TEST

Forget timing.
Forget doubling in size.
Forget how it "should" feel.

Do the poke test.

Slow spring-back = ready.
It's that simple.

PAGE 4: TEMPERATURE & TIMING GUIDE

How Temperature Controls Everything

THE GOLDEN RULE

Warmer = Faster fermentation
Cooler = Slower fermentation

Temperature is the biggest factor affecting how long your bulk fermentation takes.

BULK FERMENTATION TIMES BY TEMPERATURE

[This should be formatted as a clear, scannable table]

Kitchen Temperature	Typical Bulk Fermentation Time	Notes
85°F+	2.5-3.5 hours	Very hot kitchen or summer day - watch carefully
80-84°F	3-4 hours	Warm kitchen - ferments quickly
75-79°F	4-5 hours	**Sweet spot** - reliable timing
70-74°F	5-6 hours	Average room temp - standard timing
65-69°F	6-8 hours	Cool kitchen - be patient
60-64°F	8-10 hours	Cold house - slow but works
Below 60°F	10-12+ hours	Very cold - consider overnight bulk

These are guidelines, not rules. Always trust visual/tactile cues over the clock.

HOW TO MEASURE YOUR KITCHEN TEMPERATURE

Use a thermometer:

- Place it near where your dough will ferment
- Check it at the time of day you'll be baking

- Temperature changes throughout the day

Or estimate:

- If you're comfortable in shorts and t-shirt: probably 70-75°F
- If you need a sweater: probably 65-70°F
- If you're hot and sweaty: probably 75-80°F+

FINDING THE WARM SPOTS IN YOUR KITCHEN

Warmest spots (75-80°F+):

- ☐ Top of refrigerator
- ☐ Inside turned-off oven with light on
- ☐ Near (not on) a radiator or heating vent
- ☐ Inside microwave with a mug of just-boiled water (door closed)
- ☐ Sunny windowsill (watch out - can get too hot)

Cool spots (65-70°F):

- ☐ Counter away from heat sources
- ☐ Basement
- ☐ Cooler room in the house

Too cold spots (below 65°F):

- ☐ Garage (winter)
- ☐ Unheated room

CONTROLLING FERMENTATION WITH TEMPERATURE

TO SPEED UP FERMENTATION:

When: You want faster bulk, or your kitchen is cold

How:

1. **Use warm water** (80-90°F) when mixing dough
2. **Place dough in warmest spot** in kitchen
3. **Create a warm environment:**
    - Turn oven light on, place dough inside (oven OFF)

    - Use a proofing box if you have one
    - Place bowl in larger bowl with warm water around it

Can get it done in 3-4 hours even in a cool kitchen

TO SLOW DOWN FERMENTATION:

When: You need more flexibility in timing, or your kitchen is too warm

How:

1. **Use cool water** (60-70°F) when mixing dough
2. **Place dough in coolest spot** in kitchen
3. **Or use the fridge as a pause button:**
    - Dough fermenting too fast? Put it in the fridge.
    - Fermentation slows to a crawl
    - Take it out when you're ready to continue

Example schedule:

- 3:00 PM - Mix dough
- 5:00 PM - Need to leave the house
- Put dough in fridge
- 8:00 PM - Return home, take dough out
- Let it warm up and continue fermenting

SEASONAL ADJUSTMENTS

SUMMER BAKING (HOT KITCHEN)

Challenges:

- Fermentation goes too fast
- Hard to control timing
- Risk of overfermentation

Solutions:

- Use cool water (60-65°F)
- Use less starter (2/3 of the amount)
- Put dough in coolest spot

- Check earlier than usual
- Consider overnight cold bulk in fridge

WINTER BAKING (COLD KITCHEN)

Challenges:

- Fermentation goes too slow
- Bulk takes forever
- Starter is sluggish

Solutions:

- Use warm water (85-90°F)
- Place dough in warmest spot
- Turn oven light on, ferment inside
- Be patient - it will happen
- Consider starting in evening, letting it go overnight

OVERNIGHT BULK FERMENTATION

When to use: When your schedule doesn't allow for daytime bulk, or your kitchen is cold

How it works:

- Mix dough in evening (around 9-10 PM)
- Use cool water and/or refrigerate for part of the time
- Let it bulk overnight (8-12 hours)
- Shape in the morning

Example schedule:

- 9:00 PM - Mix dough, do folds
- 10:30 PM - Place in coolest spot (or in fridge)
- 7:00 AM - Check dough (should be ready or close)
- 7:30 AM - Shape and into fridge
- 6:00 PM - Bake

Works great for cold kitchens (60-65°F). Not recommended for hot kitchens (75°F+).

DOUGH TEMPERATURE (Advanced)

Professional bakers track **dough temperature** (not just room temp).

Ideal dough temperature after mixing: 75-78°F

How to adjust:

- If dough is too warm: Use cooler water
- If dough is too cold: Use warmer water

To calculate water temp needed: This is getting advanced, but the formula is:

Water temp = (Desired dough temp × 3) - (Room temp + Flour temp + Friction factor)

For beginners: Don't worry about this yet. Just use room temp water and adjust your environment.

THE FRIDGE IS YOUR BEST FRIEND

Use refrigeration strategically:

1. As a pause button during bulk

- Need to leave? Put dough in fridge
- Fermentation nearly stops
- Take it out when ready to continue

2. For cold final proof (our recommendation)

- Shape dough
- Put in fridge for 12-48 hours
- Total flexibility on when to bake
- Better flavor development
- Easier to score (cold dough is firmer)

3. To slow down fast fermentation

- Hot summer day, dough is moving too fast
- Put in fridge for 30-60 minutes to slow it down
- Take out and continue

KEY TAKEAWAYS

✓ Temperature is the biggest variable in fermentation timing

✓ Know your kitchen's temperature at different times of day

✓ Find the warm spots and cool spots

✓ Use temperature to control fermentation speed

✓ Don't be a slave to timing - watch the dough, use poke test

✓ The fridge is your pause button - use it whenever you need flexibility

✓ Every kitchen is different - learn yours through experience

---

YOUR KITCHEN NOTES

Use this space to track your kitchen:

My kitchen temperature is usually: _____°F

My warmest spot: _____

My coolest spot: _____

Bulk fermentation usually takes me: _____ hours

Notes:

[End of Section 6]

This section should be the most referenced section in the binder after the quick reference card. The visual guide on page 2 is absolutely critical - those three photos side-by-side will teach more than any amount of text could.

SECTION 7: SHAPING BASICS

SECTION 7: SHAPING BASICS

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PAGE 1: WHY SHAPING MATTERS

The Bridge Between Fermentation and Baking

Shaping is where you give your dough its final structure before the oven

---

WHAT IS SHAPING?

Shaping is the process of taking your fermented dough and forming it into a tight, structured loaf that will:

- Hold its form
- Rise UP instead of spreading OUT
- Have an even, attractive crumb
- Develop a beautiful crust

Think of it like this: Bulk fermentation made your dough airy and full of gas. Shaping organizes that gas into the structure you want, creating tension on the surface so it all rises in the right direction.

WHY SHAPING MATTERS

---

1. SURFACE TENSION = OVEN SPRING

[Simple diagram showing two loaves side by side: one with good tension rising up, one without spreading out]

Good surface tension:

- Dough holds its shape
- Rises upward in the oven

- Gets dramatic "oven spring" (final burst of rise)
- Beautiful tall loaf

Poor surface tension:

- Dough spreads outward
- Minimal rise in oven
- Flat, pancake-like loaf
- Disappointing

Surface tension is created during shaping.

---

2. CRUMB STRUCTURE

Well-shaped dough has:

- Even distribution of gas bubbles
- Consistent crumb throughout
- Nice irregular holes (not giant holes in some spots, dense in others)

Poorly shaped dough has:

- Uneven crumb
- Giant holes at the top, dense at bottom
- Weird texture

---

3. APPEARANCE

A well-shaped loaf:

- Looks professional
- Has smooth, taut surface
- Scores beautifully
- You're proud to share it

A poorly shaped loaf:

- Looks rough and uneven
- Might have wrinkles or folds
- Scores tear awkwardly
- Still tastes good but doesn't look as nice

THE TWO-STEP SHAPING PROCESS

Professional bakers shape in two stages:

STEP 1: PRE-SHAPE

What it is: A gentle first shape that organizes the dough into a rough round

Why do it:

- Redistributes gas bubbles evenly
- Creates initial structure
- Makes final shaping easier

How long it takes: 1-2 minutes

Then what: Let it rest (bench rest) for 15-30 minutes

STEP 2: FINAL SHAPE

What it is: The final, tighter shape with maximum surface tension

Why do it:

- Creates the tight skin that makes bread rise up
- Gives the loaf its final form

How long it takes: 2-3 minutes

Then what: Into the banneton for final proof

THE BENCH REST - WHY IT MATTERS

After pre-shaping, you let the dough rest for 15-30 minutes. This is called a **bench rest**.

Why?

When you shape dough, you tighten the gluten. It becomes resistant and fights you. If you try to do the final shape immediately, the dough will:

- Spring back

- Resist your hands
- Not hold the tension you're creating
- Be frustrating to work with

After a bench rest:

- Gluten relaxes
- Dough becomes workable again
- Final shaping is easy and smooth
- Tension holds beautifully

Don't skip the bench rest. Those 15-20 minutes make a huge difference.

BASIC SHAPES: WHAT YOU'LL LEARN TODAY

Today we're teaching: BOULE (round loaf)

[Photo: Beautiful round boule loaf]

Why start with boule:

- Simplest shape for beginners
- Most forgiving
- Works in any banneton or bowl
- Easy to score
- Looks impressive

Other shapes you'll learn in future classes:

- Bâtard (oval)
- Batard (torpedo)
- Pan loaf

Master the boule first. Everything else builds on these same principles.

HANDLING FERMENTED DOUGH

Be gentle but deliberate.

Your dough after bulk fermentation is:

- Full of gas bubbles (you worked hard to create those!)
- Delicate (can be deflated if handled roughly)

- Sticky (especially if high hydration)

When shaping:

- Work with confidence, not fear
- Be gentle, but don't be so timid you can't create tension
- Some degassing is normal and okay
- You're not trying to preserve every single bubble

It's a balance: Gentle enough not to destroy your work, firm enough to create structure.

COMMON SHAPING MISTAKES

We'll show you these in detail on the next pages, but here's what to avoid:

❌ **Too much flour** - Makes dough slide instead of grip ❌ **Not enough tension** - Loaf spreads in oven ❌ **Too tight** - Dough tears, structure breaks ❌ **Rough handling** - Deflates all the bubbles ❌ **Uneven seams** - Dough leaks during proof ❌ **Skipping the bench rest** - Final shape fights you

✓ **Just right:** Gentle but firm, good tension, clean seams, proper rest

---

YOU'LL GET BETTER WITH PRACTICE

Your first shaped loaf might:

- Look a little rough
- Not have perfect tension
- Be a bit uneven

That's completely normal.

Shaping is a physical skill. Your hands need to learn what "right" feels like. By your 3rd or 4th loaf, you'll start to get it. By your 10th, it'll feel natural.

Don't expect perfection on loaf #1. Just follow the steps and trust the process.

PAGE 2-3: BOULE SHAPING - STEP BY STEP

Your First Shape: The Round Loaf (Boule)

Follow these steps and you'll create a beautiful, tight boule

---

PHASE 1: PRE-SHAPE

Step 1: Prepare Your Surface

[Photo: Clean counter with light dusting of flour]

What to do:

- Clear your counter
- Dust very lightly with flour
- Not a lot - just enough so dough doesn't stick
- Have your bench scraper ready

Why light flour:

- Too much flour: Dough slides, can't create tension
- No flour: Dough sticks to counter
- Light dusting: Perfect grip

Step 2: Turn Out the Dough

[Photo: Dough being gently turned out of bowl onto counter]

What to do:

- Tip your bowl over slightly
- Use your bench scraper to help release the dough
- Let it gently fall onto the counter
- It will spread out - that's normal

The dough will look:

- Slack and relaxed
- Wants to spread
- Full of bubbles (you might see them inside)

Step 3: Pre-Shape Into a Round

[Photo sequence: 4 photos showing the folding motion]

What to do:

Photo 1: Grab the edge of the dough closest to you

Photo 2: Fold it up and over toward the center (like folding a letter)

Photo 3: Rotate the dough 90 degrees (quarter turn)

Photo 4: Repeat - grab the edge, fold to center

Continue this 6-8 times, working your way around the dough in a circle, until you've created a rough round package.

What you're doing:

- Organizing the dough
- Creating initial structure
- Redistributing gas bubbles
- Building some tension (but not maximum yet)

Step 4: Flip It Over

[Photo: Hands flipping the dough so seam side is down]

What to do:

- Use your bench scraper to help flip the dough
- Seam side (rough side with all the folds) goes DOWN
- Smooth side goes UP

Now you should have:

- A rough round shape
- Smooth side facing up
- All the seams underneath

Step 5: Cover and Rest (Bench Rest)

[Photo: Dough covered with towel or bowl]

What to do:

- Cover dough with a towel or bowl (so it doesn't dry out)
- Set a timer for 15-20 minutes
- Walk away
- Let the gluten relax

During this rest:

- Gluten relaxes
- Dough becomes more extensible
- Final shaping will be much easier

If you're shaping multiple loaves:

- Pre-shape them all
- Let them all rest together
- Then final shape them in the same order

Don't skip this rest. Seriously. It matters.

PHASE 2: FINAL SHAPE

15-20 minutes have passed, dough has relaxed

Step 6: Lightly Flour the Top

[Photo: Dough with light dusting of flour on top]

What to do:

- Dust the top of your dough lightly with flour
- Just enough so your hands don't stick

Step 7: Flip It Over (Again)

[Photo: Dough flipped so smooth side is now down, seam side up]

What to do:

- Flip the dough so the smooth side (which was up) is now DOWN on the counter
- The seam side (which was down) is now UP and facing you

Why flip?

- You're going to create new folds to build more tension
- Those folds will become the bottom (seam side) of your final loaf

---

Step 8: Create Tension - The Letter Fold

[Photo sequence: 4 photos showing folding from all sides]

This is where you build maximum tension.

Photo 1: Grab the edge farthest from you, stretch it gently up and away (don't rip it), fold it down toward the center

Photo 2: Grab the right edge, stretch gently, fold to center

Photo 3: Grab the left edge, stretch gently, fold to center

Photo 4: Grab the edge closest to you, stretch gently, fold up and over all the way to the far side (like closing an envelope)

Key technique:

- Stretch gently but firmly (don't tear the dough)
- Pull it taut as you fold
- Press down each fold to seal
- You're creating layers and tension

Step 9: Flip One Last Time

[Photo: Dough flipped so smooth side is now UP]

What to do:

- Use your bench scraper to flip the dough one more time
- Seam side (all those folds) is now DOWN on the counter
- Smooth side is UP
- This smooth side will be the top of your loaf

Step 10: Create Surface Tension

[Photo sequence: 3-4 photos showing the cupping and dragging motion]

This is the most important part of shaping.

Photo 1: Cup both hands around the dough like you're holding a ball

Photo 2: Using the friction between dough and counter, pull the dough toward you in a circular motion - about 1-2 inches at a time

Photo 3: Rotate the dough slightly (maybe 30-45 degrees)

Photo 4: Repeat - cup, drag toward you, rotate

Do this 5-8 times, working around the dough.

What you should see:

- The surface gets tighter and tighter
- The dough pulls into a rounder shape
- The skin on top becomes smooth and taut
- The dough starts to "stand up" more

What you should feel:

- Resistance as you drag
- The dough wants to hold its shape
- Surface tension building

The key: You're using the friction between dough and counter to pull the surface tight. Don't press down - pull horizontally.

Step 11: Check Your Work

[Photo: Final shaped boule, smooth and taut, sitting on counter]

Your shaped boule should:

- Be round (ish - doesn't have to be perfect)
- Have a smooth, taut surface
- Hold its shape (not immediately spreading)
- Have visible surface tension

If it's not quite right:

- Do a few more drag-and-rotate motions
- You can re-work it a bit

Don't over-work it though:

- If you've been shaping for 5+ minutes, stop
- It's good enough
- You'll get better with practice

Step 12: Into the Banneton

[Photo: Lifting dough with bench scraper, placing in heavily floured banneton seam-side UP]

What to do:

1. **Flour your banneton HEAVILY**
    - If using a liner: Rub flour into every crevice
    - If flour-dusted: Make sure it's really well coated
    - Don't be shy - use more flour than you think
2. **Use your bench scraper** to gently lift the dough
3. **Quickly but gently flip** it into the banneton
    - **Seam side goes UP** (into the banneton)
    - **Smooth side goes DOWN** (bottom of the banneton)

Why seam side up?

- When you flip it out to bake, seam side will be down
- Smooth side will be up (which is what you score)
4. **Pinch the seam** if it looks loose
    - Make sure it's sealed
    - You don't want it opening during proof

Step 13: Into the Fridge

[Photo: Banneton covered with plastic bag or shower cap]

What to do:

- Cover banneton with a plastic bag, shower cap, or reusable cover

- Place in refrigerator for cold proof
- Relax - you're done shaping!

Cold proof timing:

- Minimum: 12 hours
- Sweet spot: 18-24 hours
- Maximum: 48 hours

PAGE 4: COMMON SHAPING PROBLEMS

Troubleshooting Your Shape

PROBLEM 1: Dough Keeps Spreading, Won't Hold Shape

[Photo: Dough that has spread into a flat disk after shaping]

What it looks like:

- You shape it, walk away, come back and it's spread out
- Looks like a thick pancake
- No structure

Causes:

1. Overfermented dough

- Gluten has broken down
- No strength left

2. Not enough surface tension during shaping

- Didn't do enough drag-and-rotate
- Didn't pull it tight enough

3. Too much flour on counter

- Dough slides instead of grips
- Can't create tension

Solutions:

If overfermented:

- Shape it carefully but quickly
- Get it into the fridge
- Bake sooner rather than later
- Next time: don't let bulk go so long

If not enough tension:

- Go back and do more drag-and-rotate motions
- Really pull it taut
- Be more aggressive with creating tension

If too much flour:

- Wipe some flour off the counter
- You need friction to create tension

PROBLEM 2: Dough Tears During Shaping

[Photo: Dough with torn surface]

What it looks like:

- Surface rips open
- Gluten structure is breaking
- Might see large holes

Causes:

1. Too tight, too aggressive

- You're pulling too hard
- Stretching beyond what the dough can handle

2. Dough is too cold

- Cold dough is stiff and less extensible

3. Didn't let it rest enough (bench rest)

- Gluten is still tight from pre-shape

Solutions:

Be gentler:

- Pull with less force
- Stretch gently, not aggressively
- Build tension gradually

Warm the dough slightly:

- If it came from the fridge, let it warm up for 30 minutes

Longer bench rest:

- Give it 20-30 minutes instead of 15
- Let that gluten relax fully

PROBLEM 3: Seam Won't Stay Closed

[Photo: Dough with seam opening up]

What it looks like:

- After shaping, the seam (bottom) starts opening
- Might leak during proof
- Dough loses structure

Causes:

1. Didn't press folds down firmly

- The layers aren't sealed to each other

2. Too much flour on the seams

- Flour prevents dough from sticking to itself

3. Not enough tension

- The pull of surface tension should help hold seam closed

Solutions:

Press firmly:

- When making folds, press down to seal
- Use the heel of your hand

Less flour:

- Don't flour the surface that will become seams
- Only flour the outside

Pinch the seam:

- After getting it into the banneton, pinch the seam closed
- Use your fingers to seal it

PROBLEM 4: Loaf Is Lopsided or Uneven

[Photo: Misshapen boule, one side higher than other]

What it looks like:

- Not round
- One side is taller
- Asymmetrical

Causes:

1. Uneven tension

- You pulled one side tighter than the other

2. Shaped on uneven surface

- Counter isn't level

3. Placed in banneton off-center

- Dough settled unevenly

Solutions:

Even tension all around:

- Do the drag-and-rotate evenly

- Work your way around the whole dough

Check your surface:

- Make sure counter is level

Center it in banneton:

- Place dough in the very center
- It should sit evenly

Honestly: A slightly lopsided loaf still tastes great. Don't stress too much about perfect symmetry.

PROBLEM 5: Too Sticky to Handle

[Photo: Dough sticking to hands and counter badly]

What it looks like:

- Sticks to everything
- Can't shape it without making a mess
- Frustrating

Causes:

1. High hydration dough

- 75%+ hydration is naturally sticky
- This is normal for some recipes

2. Not enough flour on surface/hands

- Need more dusting

3. Warm, humid day

- Dough absorbs moisture from air

Solutions:

Flour management:

- Keep a bowl of flour nearby

- Dust your hands frequently
- Dust bench scraper
- Light layer on counter

Work quickly:

- Don't dawdle
- The longer you handle it, the stickier it gets

Wet hands instead:

- For very wet doughs, wet hands work better than floury hands
- Dough won't stick to wet hands

Use bench scraper as extension of hands:

- Scrape up dough instead of grabbing with hands
- Flip with scraper, not fingers

PROBLEM 6: Dough Sticks to Banneton

[Photo: Dough stuck in banneton when trying to flip out]

What it looks like:

- When you flip banneton to remove dough, it sticks
- Might tear the surface
- Panic ensues

Causes:

1. Not enough flour in banneton

- This is the #1 cause
- You need MORE flour than you think

2. Dough is too wet on surface

- The seam side was wet when it went in

Solutions:

FLOUR YOUR BANNETON HEAVILY:

- Like, really flour it
- Rub flour into every crevice if using liner
- Think "way too much flour" and you're probably at "enough flour"
- This is not the place to be conservative

Dust the dough too:

- Before placing in banneton, dust the seam side lightly

If it does stick:

- Don't panic
- Gently work your fingers around the edge
- Slowly peel it away
- If surface tears a bit, just score over it - it'll be fine

SHAPING TIPS & TRICKS

✓ **Practice with non-sourdough dough first** if you're nervous - make a simple bread dough and practice shaping

✓ **Watch videos** - Shaping is easier to learn by watching than reading

✓ **Your first 3 loaves will be rough** - that's expected

✓ **By loaf #5-10 you'll have the feel** for it

✓ **Use your bench scraper constantly** - it's your best friend

✓ **Confidence matters** - hesitant, timid shaping doesn't create tension

✓ **But don't be brutal** - firm and gentle, not rough

✓ **The bench rest is non-negotiable** - seriously, don't skip it

✓ **Different doughs feel different** - wet vs. dry, white vs. whole grain - adjust accordingly

---

REMEMBER: ADVANCED SHAPING IS IN THE NEXT CLASS

What we've taught you today:

- ✓ Basic boule shape
- ✓ Pre-shape and final shape

- ✓ Creating surface tension
- ✓ Getting it into the banneton

What's coming in the Intermediate Class:

- Multiple shaping techniques (bâtard, batard, pan loaf)
- Shaping very high-hydration doughs
- Shaping with inclusions (nuts, cheese, etc.)
- Creating specific crumb patterns through shaping
- Advanced tension techniques

For now: Master the boule. That's enough.

YOUR SHAPING NOTES

Use this space to track what works for you:

Things that worked well:

Things to improve:

My kitchen counter height is: _____ (comfortable for shaping?)

Flour I used in banneton: _____

Did dough stick? ☐ Yes ☐ No

Next time I'll:

[End of Section 7]

This section balances being thorough enough to guide beginners while acknowledging that shaping is a physical skill that requires practice. The photos throughout this section are

absolutely critical - showing the hand positions, the drag-and-rotate motion, and the progression from pre-shape to final shape.

SECTION 8: BAKING SCHEDULES & TEMPLATES

SECTION 8: BAKING SCHEDULES & TEMPLATES

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PAGE 1: HOW TO BUILD YOUR SCHEDULE

Working Backwards From Fresh Bread

The secret to fitting sourdough into your life

THE REVERSE-ENGINEERING METHOD

Most beginners think: "I'll start baking and see when it's done."

Better approach: "I want fresh bread at [specific time]. Let me work backwards."

Why this works:

- You control the schedule, it doesn't control you
- You can plan around work, kids, life
- No surprises or midnight baking sessions
- Reduces stress

THE BASIC TIMELINE

Here's what happens in a typical sourdough bake:

FEED STARTER → Mix Dough → Bulk Fermentation → Shape → Final Proof → Bake → BREAD!

↓	↓	↓	↓	↓	↓
4-6 hrs	5 min	4-6 hrs	5 min	12-48 hrs	45 min

Total time: About 24-36 hours from feeding starter to fresh bread

Total ACTIVE time: About 30-45 minutes spread across 1-2 days

---

STEP-BY-STEP: BUILDING YOUR SCHEDULE

Let's say you want fresh bread Saturday at 9:00 AM.

STEP 1: When do you want bread? → Saturday, 9:00 AM

STEP 2: Work backwards - Baking time

Bread bakes for ~45 minutes

So it goes IN the oven at: → Saturday, 8:15 AM

STEP 3: Work backwards - Preheat time

Oven and Dutch oven need 1 hour to preheat

So you start preheating at: → Saturday, 7:15 AM

STEP 4: Work backwards - Final proof

For cold proof (our recommendation): 12-24 hours in fridge

Let's use 13 hours (overnight)

So dough needs to be shaped and in fridge by: → Friday, 6:15 PM

(If you want longer flavor development, shape it earlier - say Friday 8 AM - and proof 24 hours)

STEP 5: Work backwards - Bulk fermentation

Usually takes 4-6 hours depending on temperature

Let's use 5 hours

So dough needs to be mixed by: → Friday, 1:15 PM

STEP 6: Work backwards - Starter needs to be ready

Starter should be at peak when you mix dough

So starter needs to be fed by: → Friday, 7:15 AM (6 hours before mixing)

YOUR COMPLETE SCHEDULE:

FRIDAY
7:15 AM - Feed starter
1:15 PM - Mix dough
1:45 PM - Fold #1
2:15 PM - Fold #2
2:45 PM - Fold #3
3:15 PM - Fold #4
3:15-6:15 PM - Continue bulk fermentation
6:15 PM - Shape dough, into fridge

SATURDAY
7:15 AM - Preheat oven
8:15 AM - Score and load bread
9:00 AM - FRESH BREAD!

ADJUSTING FOR YOUR KITCHEN

If your kitchen is warmer (75-80°F):

- Bulk will take 4 hours instead of 5
- Feed starter 5 hours before mixing instead of 6
- Everything moves up by an hour

If your kitchen is cooler (65-70°F):

- Bulk might take 6-7 hours
- Feed starter 7-8 hours before mixing
- Everything moves back by 1-2 hours

This is why we emphasize: Watch the dough, not just the clock.

FLEXIBILITY POINTS IN YOUR SCHEDULE

You can adjust timing at several points:

1. Starter feeding ratio

- Use 1:5:5 ratio if you want it ready in 8-12 hours (overnight)
- Use 1:1:1 ratio if you want it ready in 4-6 hours (same day)

2. Cold proof length

- Minimum 12 hours, maximum 48 hours
- This is your biggest flexibility window
- Want to bake Sunday instead of Saturday? Just leave it in the fridge another day

3. Bulk fermentation location

- Put in warm spot = faster bulk
- Put in cool spot = slower bulk
- Put in fridge partway through = pause button

4. Starting time

- You can start earlier or later
- The timeline stays the same, just shifts

THE FRIDGE IS YOUR SECRET WEAPON

Cold proof gives you MASSIVE flexibility:

Let's say you shape Friday at 6 PM.

You could bake:

- Saturday 9 AM (15 hours cold proof)
- Saturday 6 PM (24 hours cold proof)
- Sunday 9 AM (39 hours cold proof)
- Sunday evening (48 hours cold proof)

Same shaping time, four different bake times.

This is why cold proofing is perfect for beginners.

WHAT IF LIFE HAPPENS?

Scenario 1: Bulk fermentation is going faster than expected → Put dough in fridge to slow it down → Take it out later when you're ready

Scenario 2: You need to leave during bulk → Put dough in fridge → It will hold for hours → Take out and continue when you return

Scenario 3: You're not ready to bake when the proof is done → It's in the fridge, it can wait → You've got 12-48 hour window

Scenario 4: You mixed dough but life got crazy → Shape it, put it in fridge → Bake it whenever you can in next 2 days

The fridge solves almost every timing problem.

PAGE 2: PRE-BUILT SCHEDULE #1 - WEEKEND MORNING BAKE

Fresh Bread Saturday Morning

Perfect for weekend brunch or just enjoying fresh bread with your coffee

---

THE GOAL:

Fresh bread Saturday at 9:00 AM

THE COMPLETE SCHEDULE:

FRIDAY

9:00 AM - Feed Starter

- Remove starter from fridge (if stored cold)
- Measure: 30g ripe starter + 135g flour + 135g water

- Mix thoroughly, cover loosely
- Leave at room temperature
- Set a reminder for 3:00 PM

3:00 PM - Check Starter & Mix Dough

First, check starter:

- ☐ Has it doubled?
- ☐ Is it domed?
- ☐ Does it pass float test?
- If yes to all → proceed
- If no → wait another hour

Mix the dough:

- 300g active starter
- 350g water (room temp)
- 500g bread flour
- 10g salt
- Mix until no dry flour remains
- Cover bowl
- Set timer for 30 minutes

3:30 PM - Fold #1

- Stretch and fold (all 4 sides)
- Cover bowl
- Set timer for 30 minutes

4:00 PM - Fold #2

- Stretch and fold (all 4 sides)
- Cover bowl
- Set timer for 30 minutes

4:30 PM - Fold #3

- Stretch and fold (all 4 sides)

- Cover bowl
- Set timer for 30 minutes

5:00 PM - Fold #4 + Windowpane Test

- Stretch and fold (all 4 sides)
- Do windowpane test
    - ☐ Pass → proceed to bulk
    - ☐ Fail → do another fold in 30 min
- Cover bowl
- Place in warm spot for bulk fermentation

5:00 PM - 8:00 PM - Bulk Fermentation

- Let dough rise undisturbed
- Do other things
- Set reminder for 8:00 PM

8:00 PM - Check Bulk + Shape

Check if bulk is done:

- ☐ Risen 50-75%?
- ☐ Jiggles when moved?
- ☐ Poke test = slow spring-back?
- If yes to all → shape it
- If no → wait 30 more minutes, check again

Shape the dough:

- Pre-shape into round
- Bench rest 15 minutes
- Final shape (boule)
- Into heavily floured banneton (seam side up)
- Cover with plastic bag

8:15 PM - Into Fridge

- Place banneton in refrigerator

- Go relax, watch a movie, go to bed
- Set alarm for 7:00 AM Saturday

SATURDAY

7:00 AM - Preheat Oven

- Place Dutch oven with lid in oven
- Set oven to 450°F
- Let preheat for full hour
- Make coffee, have breakfast
- Set timer for 1 hour

8:00 AM - Score & Load

- Remove banneton from fridge
- Flip onto parchment paper
- Score the dough (one slash)
- Carefully remove hot Dutch oven
- Lower bread on parchment into Dutch oven
- Put lid on
- Into oven immediately

8:00-8:20 AM - Bake Covered

- Bake 20 minutes with lid ON
- Don't open oven

8:20 AM - Remove Lid

- Remove lid from Dutch oven
- Continue baking

8:20-8:45 AM - Bake Uncovered

- Bake 20-25 more minutes
- Until deep golden brown

- Internal temp at least 200°F

8:45 AM - Remove From Oven

- Turn bread out onto cooling rack
- Resist the urge to cut it immediately

9:45 AM - Cool Completely

- Wait at least 1 hour (2 hours better)
- Let interior finish cooking
- Let crumb set up

10:00 AM+ - SLICE & ENJOY

Fresh bread for your weekend morning!

ACTIVE TIME BREAKDOWN:

Friday:

- 9:00 AM: 5 minutes (feed starter)
- 3:00 PM: 10 minutes (mix dough)
- 3:30-5:00 PM: 8 minutes total (four folds, 2 min each)
- 8:00 PM: 10 minutes (shape)

Saturday:

- 7:00 AM: 2 minutes (turn on oven)
- 8:00 AM: 5 minutes (score & load)
- 8:45 AM: 1 minute (remove from oven)

Total active time: ~40 minutes spread across 2 days

NOTES & ADJUSTMENTS:

Kitchen warmer than 75°F?

- Start feeding starter at 10 AM instead of 9 AM
- Bulk will finish around 7 PM instead of 8 PM

Kitchen cooler than 70°F?

- Start feeding starter at 8 AM instead of 9 AM
- Bulk might go until 9 PM or later

Want more sour flavor?

- Shape Friday at 6 PM (2 hours earlier)
- Cold proof for 26 hours instead of 13

Want to sleep in Saturday?

- Bake at 10 AM or 11 AM instead
- Everything else stays the same (it's in the fridge waiting)

PAGE 3: PRE-BUILT SCHEDULE #2 - WEEKNIGHT BAKE

Fresh Bread Tuesday Evening After Work

For when you want fresh bread during the week

THE GOAL:

Fresh bread Tuesday at 6:30 PM (when you get home from work)

THE COMPLETE SCHEDULE:

MONDAY

4:00 PM - Feed Starter (When You Get Home)

- Remove from fridge
- Feed: 30g starter + 135g flour + 135g water
- Leave at room temp
- Go about your evening

9:00 PM - Mix Dough (Before Bed)

Check starter first:

- Should be peaked (5 hours later)
- If not quite ready, wait 30 min

Mix dough:

- 300g starter + 350g water + 500g flour + 10g salt
- Mix thoroughly
- Cover

9:30 PM - Fold #1

- Stretch and fold
- Cover
- Set timer for 30 minutes

10:00 PM - Fold #2

- Stretch and fold
- Cover
- Set timer for 30 minutes

10:30 PM - Final Fold + Bedtime

- Do fold #3
- Windowpane test (should pass or be close)
- Cover bowl
- Place in coolest spot in kitchen (65-68°F ideal)
- **Go to bed**

OVERNIGHT - Bulk Fermentation

- Dough ferments slowly in cool kitchen
- Should take about 7-8 hours

- You're sleeping!

TUESDAY

5:30 AM - Shape (Before Work)

Wake up a bit early

Check bulk:

- Has it risen 50-75%?
- Poke test?
- If not quite ready, wait 30 min (or put in fridge and finish tonight)

Shape:

- Pre-shape
- Rest 15 minutes while you shower/get ready
- Final shape
- Into banneton (seam up)
- Cover with plastic

6:00 AM - Into Fridge

- Place banneton in fridge
- **Go to work**
- It will cold proof all day

5:00 PM - Preheat Oven (When You Get Home)

- Place Dutch oven in oven
- Set to 450°F
- Preheat 1 hour
- Change clothes, unwind
- Set timer

6:00 PM - Score & Load

- Remove banneton from fridge (been there 12 hours)

- Flip onto parchment
- Score
- Into hot Dutch oven
- Lid on, into oven

6:00-6:20 PM - Bake Covered

- 20 minutes with lid

6:20 PM - Remove Lid

6:20-6:45 PM - Bake Uncovered

- 20-25 minutes until golden

6:45 PM - Remove From Oven

- Onto cooling rack

7:45 PM+ - Slice & Enjoy

- Wait 1 hour minimum
- Fresh bread for dinner or tomorrow's breakfast!

ACTIVE TIME BREAKDOWN:

Monday:

- 4:00 PM: 5 min (feed starter)
- 9:00 PM: 10 min (mix)
- 9:30-10:30 PM: 6 min (folds)

Tuesday:

- 5:30 AM: 10 min (shape)

- 5:00 PM: 2 min (oven on)
- 6:00 PM: 5 min (score & load)

Total: ~38 minutes

THE KEY:

Overnight bulk in a cool kitchen (65-68°F) while you sleep. If your kitchen is warmer, this won't work as well - the dough will overferment by morning.

ADJUSTMENTS:

Kitchen too warm for overnight bulk?

- Mix dough at 9 PM
- Do 2 folds (9:30 and 10:00 PM)
- Put in fridge at 10:30 PM
- Take out at 5:30 AM, let warm up for 30 min
- Finish bulk with 1-2 more folds
- Shape around 6:30 AM before work

Don't want to wake up early Tuesday?

- Shape Monday night (around 11 PM after bulk finishes)
- Cold proof overnight and all day Tuesday (21 hours)
- Bake Tuesday evening as scheduled

PAGE 4: PRE-BUILT SCHEDULE #3 - LONG COLD PROOF (MAXIMUM FLEXIBILITY)

Ultimate Flexible Schedule

Perfect for unpredictable schedules

THE CONCEPT:

Shape your dough and put it in the fridge for 12-48 hours. Bake whenever you want during that window.

This gives you flexibility to bake:

- Saturday morning
- Saturday evening
- Sunday morning
- Sunday afternoon
- Even Monday morning

All from one shaping session.

THE SCHEDULE:

FRIDAY

9:00 AM - Feed Starter

3:00 PM - Mix Dough

- Standard mixing process

3:30-5:00 PM - Folds

- 4 sets of stretch & fold, 30 min apart

5:00-8:00 PM - Bulk Fermentation

- Let rise 50-75%

8:00 PM - Shape & Into Fridge

- Pre-shape, rest, final shape
- Into banneton
- Into fridge immediately

SATURDAY / SUNDAY / MONDAY - BAKE WHENEVER YOU WANT

Option 1: Saturday 9 AM (13 hours cold proof)

- **Flavor:** Mild, good tang
- **Oven spring:** Maximum
- **Best for:** Classic sourdough flavor

Option 2: Saturday 6 PM (22 hours cold proof)

- **Flavor:** More developed, tangier
- **Oven spring:** Excellent
- **Best for:** Richer flavor, dinner bread

Option 3: Sunday 10 AM (38 hours cold proof)

- **Flavor:** Very tangy, complex
- **Oven spring:** Good
- **Best for:** Lovers of sour sourdough

Option 4: Sunday 6 PM (46 hours cold proof)

- **Flavor:** Maximum sour
- **Oven spring:** Decent
- **Best for:** "I want SOUR sourdough"

Beyond 48 hours:

- Possible but risky
- May start to overproof
- Oven spring decreases
- Very sour flavor

HOW TO USE THIS SCHEDULE:

Step 1: Shape Friday night, put in fridge

Step 2: Wait and see what your weekend brings

Step 3: Decide when you want to bake

Step 4: Preheat oven 1 hour before desired bake time

Step 5: Bake whenever you're ready (within the 12-48 hour window)

THIS IS THE MOST FORGIVING SCHEDULE

Why we love it:

- No commitment to specific bake time
- Can change your mind
- Weekend plans change? No problem
- Want fresh bread Sunday instead of Saturday? Just wait
- Flavor develops beautifully during long cold proof

For busy people or beginners, this is THE way to go.

PAGE 5: BLANK SCHEDULE TEMPLATE

Build Your Own Schedule

Use this template to plan your bake

STEP 1: WHEN DO YOU WANT FRESH BREAD?

Day: _____ Time: _____

STEP 2: WORK BACKWARDS - FILL IN THE TIMES

BAKING

Bread comes out of oven: _____ (your goal time)

Bread goes INTO oven: _____ (subtract 45 min)

Start preheating oven: _____ (subtract 1 hour from above)

FINAL PROOF (COLD)

Shape and into fridge by: _____

Subtract 12-24 hours from preheat time (your choice) We recommend 12-18 hours for first bakes

---

BULK FERMENTATION

Mix dough by: _____

Subtract 5 hours from shaping time (adjust for your kitchen temp) Warmer kitchen = 4 hours | Cooler kitchen = 6-7 hours

---

FOLDS (during bulk)

Fold #1: _____ (30 min after mixing)

Fold #2: _____ (30 min after fold #1)

Fold #3: _____ (30 min after fold #2)

Fold #4: _____ (30 min after fold #3)

STARTER

Feed starter by: _____

Subtract 5-6 hours from mixing time

YOUR COMPLETE SCHEDULE:

DAY 1: _____

_____ AM/PM - Feed starter

_____ PM - Mix dough

_____ PM - Fold #1

_____ PM - Fold #2

_____ PM - Fold #3

_____ PM - Fold #4

_____ PM - Continue bulk fermentation

_____ PM - Shape dough, into fridge

DAY 2: _____

_____ AM/PM - Preheat oven

_____ AM/PM - Score and load

_____ AM/PM - **FRESH BREAD!**

NOTES FOR YOUR BAKE:

Kitchen temperature: _____ °F

Expected bulk time: _____ hours

Expected cold proof time: _____ hours

Special considerations:

PAGE 6: TROUBLESHOOTING SCHEDULES

When Life Doesn't Follow Your Plan

PROBLEM: Starter isn't ready when I need to mix dough

Solution 1: Wait longer

- Check every 30 minutes
- Use it when peaked, adjust all other times accordingly

Solution 2: Put it in a warmer spot

- Top of fridge, inside turned-off oven with light on
- Can speed it up

Solution 3: Next time, feed it earlier or with different ratio

- Use 1:1:1 for faster rise
- Or feed it an hour earlier

PROBLEM: Bulk fermentation is taking way longer than expected

Your kitchen is cooler than you thought.

Solution 1: Move to warmer spot

- Top of fridge, warm room, etc.

Solution 2: Wait it out

- Might take 7-8 hours in cool kitchen
- That's okay - watch the dough, not the clock

Solution 3: Next time, start earlier

- If it took 7 hours today, plan for 7 hours next time

PROBLEM: Bulk fermentation finished too early

Your kitchen is warmer than you thought, or starter was very active.

Solution 1: Shape it now and adjust everything else

- Bake earlier than planned, or
- Let it cold proof longer

Solution 2: Put it in fridge to pause

- Slows fermentation dramatically
- Resume when you're ready

Solution 3: Next time, start later

- If it only took 3 hours today, plan accordingly next time

PROBLEM: I need to leave in the middle of bulk

Solution: Put dough in fridge

- Fermentation slows to crawl
- Can stay there for hours
- Take out when you return
- Let warm up for 30 minutes
- Continue bulk fermentation

PROBLEM: I need to leave in the middle of folds

Relax - folds aren't critical minute-by-minute.

Solution: Do what you can

- If you miss a fold, no big deal
- Just do the next one when you return
- Or skip a fold entirely - 3 folds instead of 4 is fine

PROBLEM: I shaped it but now I can't bake when I planned

If it's in the fridge: Solution: Leave it longer

- It can go 12-48 hours
- Just bake it later

If it's at room temp: Solution: Put it in the fridge

- Even if it's only been 1 hour
- Cold pauses fermentation
- Bake when ready

PROBLEM: I'm ready to bake but dough seems underproofed

Solution 1: Wait longer

- Let it come to room temp for 30-60 minutes
- Then bake

Solution 2: Bake it anyway

- Underproofed bread from cold is often fine
- You'll still get good oven spring
- Won't be your best loaf but will be good

PROBLEM: I'm ready to bake but dough seems overproofed

Solution: Bake it immediately

- Don't wait any longer
- It won't be your best loaf
- But it's still bakeable
- Learn from it for next time

PROBLEM: My schedule never works out

You need the FLEXIBLE SCHEDULE approach:

New approach:

1. Shape and put in fridge
2. Don't commit to a bake time
3. Bake anytime in the next 12-48 hours whenever life allows
4. This is the most forgiving way to bake

THE GOLDEN RULES OF SCHEDULE FLEXIBILITY:

✓ **The fridge is a pause button** - use it whenever you need time

✓ **Temperature controls speed** - warmer = faster, cooler = slower

✓ **Cold proof has a HUGE window** - 12-48 hours gives you options

✓ **Don't panic when times don't match** - the dough doesn't know your plan

✓ **Trust visual/tactile cues over the clock** - windowpane, poke test, volume

✓ **Your second loaf will be easier** - you'll know your kitchen better

✓ **Take notes** - track actual times so you can adjust next time

---

REMEMBER:

Sourdough bakers have been making bread for thousands of years without timers or schedules written down.

The dough tells you when it's ready. Learn to listen to it.

The schedule is a guide, not a rulebook.

[End of Section 8]

This section should be heavily used - students will reference it constantly as they plan their bakes. The blank templates are critical, and having multiple copies of them would be useful (students could fill one out each time they bake).

Should I continue to Section 9 (Recipes)?

SECTION 10: TROUBLESHOOTING GALLERY

SECTION 10: TROUBLESHOOTING GALLERY

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PAGE 1: WHEN BREAD DOESN'T GO AS PLANNED

Every Baker Has Failed Loaves

Learning what went wrong is how you get better

FIRST: YOUR BREAD IS PROBABLY STILL EDIBLE

Before we dive into problems and solutions, remember:

Most "failed" sourdough is still delicious.

- Too dense? Makes amazing toast and croutons
- Too sour? Perfect for grilled cheese or dipping in soup
- Flat loaf? Still has great flavor, just slice it thinner
- Gummy? Let it sit another day, it often improves

Very few bread failures are actual garbage. Don't throw it away - eat it, learn from it, and do better next time.

HOW TO USE THIS SECTION

Step 1: Find the photo that looks most like your bread

Step 2: Read what caused it

Step 3: Note what to change next time

Step 4: Keep baking - you'll get better with each loaf

THE MOST COMMON ISSUES

In this section, we cover:

1. Dense, gummy crumb
2. Flat loaf with no oven spring
3. Huge holes with dense spots (uneven crumb)
4. Pale, soft crust
5. Burnt crust, raw inside
6. Loaf spread out flat instead of rising up
7. Brick-hard crust
8. Way too sour
9. Not sour at all
10. Scoring tears and blowouts
11. No "ear" on the score
12. Stuck to banneton

Remember: Even experienced bakers have off days. This is all part of the journey.

PAGE 2: CRUMB PROBLEMS

PROBLEM #1: DENSE, GUMMY CRUMB

[LARGE PHOTO: Cross-section of bread showing very tight, dense crumb with few small holes, looks heavy and compact]

WHAT YOU'RE SEEING:

- Tight, dense crumb (not many holes)
- Texture is gummy or dough-like when you press it
- Feels heavy
- Might be slightly undercooked in the center
- No light, airy structure

WHAT CAUSED THIS:

Most likely: Underfermented bulk

- You didn't let bulk fermentation go long enough
- Dough didn't rise 50-75%
- Poke test probably sprang back too fast
- Not enough gas was produced to create an open crumb

Other possible causes:

Not enough gluten development

- Didn't pass windowpane test
- Gluten couldn't trap the gas that was produced
- [See Section 5: Mixing & Gluten Development]

Underbaked

- Pulled from oven too soon
- Center didn't fully cook
- Internal temp below 200°F
- Appears gummy because it's still doughy inside

Weak starter

- Starter wasn't active enough
- Didn't have enough yeast to raise the dough
- [See Section 4: Starter Deep Dive]

Too much whole grain flour

- Whole wheat/rye creates denser crumb naturally
- Bran cuts gluten strands
- Need to adjust expectations or hydration

HOW TO FIX IT NEXT TIME:

✓ Let bulk fermentation go longer

- Wait for 50-75% rise
- Trust the poke test (slow spring-back)
- Don't rush this step
- [See Section 6: Fermentation Visual Guide]

✓ Ensure gluten is fully developed

- Must pass windowpane test before bulk
- Do all 4 folds

✓ **Bake longer**

- Until deep golden brown
- Internal temp at least 200°F (205°F is even better)
- Don't pull it early

✓ **Use active, vigorous starter**

- Should double in 4-6 hours
- Should pass float test easily

✓ **If using whole grains, increase hydration**

- Whole wheat absorbs more water
- Add 10-20g more water per 100g whole grain flour

IS IT STILL GOOD?

Yes! Dense bread makes:

- Excellent toast (crisps up beautifully)
- Great croutons
- Perfect for sandwiches (holds up to fillings)
- French toast base

PROBLEM #2: HUGE HOLES WITH DENSE SPOTS (UNEVEN CRUMB)

[LARGE PHOTO: Cross-section showing giant irregular holes at top, very dense compressed crumb at bottom]

WHAT YOU'RE SEEING:

- Massive holes in some areas (you could fit your finger through)
- Very dense, tight crumb in other areas
- Uneven, irregular structure throughout
- Often the big holes are at the top, dense at bottom
- Looks like two different breads in one loaf

WHAT CAUSED THIS:

Most likely: Poor shaping technique

- Didn't create even surface tension
- Trapped big air pockets when shaping
- Uneven distribution during pre-shape
- [See Section 7: Shaping Basics]

Other possible causes:

Overfermented bulk

- Let it go too far (over 75% rise)
- Gluten started breaking down
- Large bubbles formed and merged
- Some areas collapsed while others stayed inflated

Inconsistent folding during bulk

- Some areas got more folds than others
- Gluten development was uneven

Rough handling before baking

- Knocked out gas from some areas
- Left other areas intact

HOW TO FIX IT NEXT TIME:

✓ Improve shaping technique

- Do proper pre-shape to even out gas distribution
- Create consistent surface tension all around
- Don't trap large air pockets
- Practice the drag-and-rotate motion

✓ Don't overferment bulk

- Stop at 50-75% rise
- Don't let it go beyond that
- Poke test should show slow spring, not no spring

✓ Even folding during bulk

- Make sure you're stretching all sides equally
- Work systematically around the dough

✓ **Handle gently but consistently**

- Don't punch down one area and baby another
- Uniform, gentle handling

IS IT STILL GOOD?

Absolutely! It actually looks kind of cool and artisanal. The flavor is usually great. The giant holes might make it hard to spread butter on, but it's still delicious bread.

PROBLEM #3: VERY TIGHT CRUMB, NO HOLES AT ALL

[LARGE PHOTO: Cross-section showing extremely tight, sandwich-bread-like crumb with almost no visible holes]

WHAT YOU'RE SEEING:

- Crumb looks like sandwich bread (uniform, tiny cells)
- No irregular holes
- Very tight structure throughout
- Almost no air pockets
- Dense but not necessarily gummy

WHAT CAUSED THIS:

Definitely: Severely underfermented

- Bulk didn't go nearly long enough
- Probably only rose 20-30%, not 50-75%
- Yeast didn't produce enough CO_2
- This is the #1 beginner mistake

Could also be:

Very weak starter

- Starter had very little yeast activity
- Couldn't produce enough gas

Too cold during bulk

- Kitchen was very cold (under 65°F)
- Fermentation barely happened
- Needed much more time

HOW TO FIX IT NEXT TIME:

✓ Let bulk go MUCH longer

- This needed probably 3-4 more hours
- Watch for that 50-75% rise
- Be patient - it takes time
- [See Section 6: Fermentation Guide]

✓ Make sure starter is strong

- Should double in 4-6 hours when fed
- Should pass float test
- Very active and bubbly

✓ Ferment in warmer spot

- If kitchen is cold, find warm spot
- Top of fridge, oven with light on
- Aim for 70-75°F

IS IT STILL GOOD?

Yes - it's actually perfect for certain uses:

- Sandwiches (holds together great)
- French toast
- Bread pudding
- Croutons

PAGE 3: SHAPE & RISE PROBLEMS

PROBLEM #4: FLAT LOAF, NO OVEN SPRING

[LARGE PHOTO: Loaf from the side - very flat, pancake-like, maybe 2-3 inches tall instead of 4-5]

WHAT YOU'RE SEEING:

- Loaf is flat and wide instead of tall and round
- Spread out instead of rising up
- Little to no oven spring (final burst of rise in oven)
- Might have decent crumb inside but shape is disappointing
- Looks more like a thick frisbee than a boule

WHAT CAUSED THIS:

Most likely: Overfermented

- Bulk went too long (over 75-100% rise)
- Or final proof went too long
- Gluten broke down
- Lost structure and strength
- [See Section 6, Page 2: Overfermented Stage]

Other possible causes:

Poor shaping / no surface tension

- Didn't create tight skin during shaping
- Dough wasn't organized properly
- [See Section 7: Shaping Basics]

Dough too wet

- Hydration too high for your flour
- Recipe called for 80%+ hydration
- Dough couldn't hold shape

Weak starter

- Very little yeast activity
- Couldn't produce oven spring

Scored too deep

- Cut too deep, let all the gas escape
- Deflated the loaf

HOW TO FIX IT NEXT TIME:

✓ **Watch fermentation carefully**

- Stop bulk at 50-75% rise, not more
- Poke test should show slow spring, not zero spring
- Don't let cold proof go beyond 48 hours

✓ **Create strong surface tension when shaping**

- Really pull that skin tight
- Do the drag-and-rotate motion 6-8 times
- Make sure it's taut

✓ **Reduce hydration if needed**

- Try 70% hydration instead of 75%+
- Easier to handle, holds shape better
- Work your way up to higher hydration as you gain skill

✓ **Score at proper depth**

- Only ½ inch deep, not deeper
- 30-45° angle
- One decisive slash

PROBLEM #5: LOAF SPREAD OUT WIDE INSTEAD OF TALL

[LARGE PHOTO: Overhead view of very wide, flat loaf that spread during baking]

WHAT YOU'RE SEEING:

- Loaf is much wider than it should be
- Spread out to the edges of the Dutch oven
- Very little height
- Shape is blob-like instead of round

WHAT CAUSED THIS:

Same as Problem #4, but even more extreme:

Definitely overfermented or no surface tension

- Structure completely gave out
- Dough had no strength to hold up
- Relaxed too much

HOW TO FIX IT:

Same as Problem #4, but be even more careful about:

- Stopping bulk earlier
- Creating maximum surface tension
- Possibly reducing hydration

PROBLEM #6: LOAF STUCK IN BANNETON, SURFACE TORN

[LARGE PHOTO: Loaf with torn, messy surface where it stuck to banneton]

WHAT YOU'RE SEEING:

- Surface is ripped and torn
- Bits of dough stuck in the banneton
- Irregular, messy appearance
- Might have exposed crumb where it tore
- Frustrating!

WHAT CAUSED THIS:

Definitely: Not enough flour in banneton

- This is the #1 cause
- You need MORE flour than you think

Could also be:

Dough surface was too wet

- Seam side was wet when it went in
- High hydration dough

Banneton liner is worn or sticky

- Old liners can get sticky
- Needs replacing or heavy flouring

HOW TO FIX IT NEXT TIME:

✓ FLOUR YOUR BANNETON HEAVILY

- Like, really heavily
- Rub flour into every crevice
- It should look white/coated
- Use rice flour (sticks less than wheat flour)
- This is not the place to be conservative with flour

✓ Dust dough before putting in banneton

- Lightly dust the seam side
- Helps prevent sticking

✓ If using liner, flour it thoroughly

- Work flour into the cloth
- Make sure it's generously coated

✓ Consider rice flour

- Rice flour is less sticky than wheat flour
- Professional trick

WHAT TO DO IF IT HAPPENS:

- Don't panic
- Score over the torn areas
- Bake it anyway
- It will still taste great
- The crust will cover most sins

PAGE 4: CRUST & BAKING PROBLEMS

PROBLEM #7: PALE, SOFT CRUST

[LARGE PHOTO: Loaf with very pale, blonde crust, looks undercooked]

WHAT YOU'RE SEEING:

- Crust is pale blonde or tan instead of deep golden brown
- Soft crust, not crispy
- Might look undercooked (even if inside is done)
- No nice caramelization
- Not very appetizing

WHAT CAUSED THIS:

Most likely: Oven not hot enough

- Temperature was too low
- Oven didn't preheat long enough
- Dutch oven wasn't hot enough

Other causes:

Not enough steam

- Baked without lid on Dutch oven
- Didn't trap steam
- Crust set before browning

Pulled too early

- Didn't bake long enough
- Needed more time

Overfermented dough

- No sugars left for browning (Maillard reaction)
- Yeast ate all the sugars during fermentation

HOW TO FIX IT NEXT TIME:

✓ Preheat oven fully

- Full 1 hour preheat at 450°F
- Don't skip this step
- Dutch oven needs to be screaming hot

✓ Bake covered first

- 20 minutes with lid ON
- Traps steam
- Then remove lid for browning

✓ Bake longer uncovered

- Keep going until DEEP golden brown
- You want rich color
- Don't pull it when it's still blonde

✓ Don't overferment

- Stop bulk at proper time
- Preserve some sugars for crust development

PROBLEM #8: BURNT/DARK CRUST, RAW INSIDE

[LARGE PHOTO: Loaf with very dark, nearly black crust but gummy interior when cut]

WHAT YOU'RE SEEING:

- Crust is very dark brown or burnt
- Inside is still gummy or undercooked
- Center is raw or dough-like
- Outside cooked way faster than inside

WHAT CAUSED THIS:

Definitely: Oven too hot

- Temperature was too high
- Crust set and browned before center could cook
- Needed lower temp or longer, slower bake

HOW TO FIX IT NEXT TIME:

✓ Lower oven temperature

- Try 425°F instead of 450°F
- Or: Bake at 450°F for first 20 min, then drop to 400°F

✓ Bake longer at lower temp

- Give center time to cook through
- Aim for 205°F internal temp

✓ Check oven with thermometer

- Your oven might run hot
- Get an oven thermometer
- Adjust dial accordingly

✓ If crust is browning too fast

- Tent with foil for last 10-15 minutes
- Lets inside continue cooking without burning outside

PROBLEM #9: BRICK-HARD CRUST

[LARGE PHOTO: Loaf with crust so hard you need a saw to cut it]

WHAT YOU'RE SEEING:

- Crust is extremely hard and thick
- Difficult to cut through
- Might chip your knife
- Rock-solid exterior

WHAT CAUSED THIS:

Most likely: Baked too long

- Left in oven too long
- All moisture evaporated from crust

Could also be:

Baked uncovered the whole time

- No steam phase
- Crust set hard immediately

Over-baked after removing lid

- Uncovered phase went too long (40+ minutes)

HOW TO FIX IT NEXT TIME:

✓ **Don't overbake**

- 20 min covered + 20-25 min uncovered is enough
- Pull when deep golden, not darker

✓ **Bake covered first**

- Always do 20 min with lid on
- Steam keeps crust from hardening

✓ **Watch timing on uncovered phase**

- 20-25 minutes uncovered max
- Not 30-40 minutes

CAN YOU SAVE IT?

Sort of:

- Store in plastic bag overnight
- Moisture redistributes
- Crust softens a bit
- Or remove the hard crust before eating

PAGE 5: FLAVOR & SCORING PROBLEMS

PROBLEM #10: WAY TOO SOUR

[No photo needed - this is a taste issue]

WHAT YOU'RE EXPERIENCING:

- Bread tastes extremely sour
- Almost vinegary
- Too acidic
- Harsh tang, not pleasant
- Might even taste alcoholic

WHAT CAUSED THIS:

Most likely: Overfermented

- Bulk went too long
- Cold proof went beyond 48 hours
- Bacteria produced too much acid

Could also be:

Starter was very acidic

- Hadn't been fed in a while
- Produced excess acid

High temperature fermentation

- Warm kitchen (80°F+) favors acid production

HOW TO FIX IT NEXT TIME:

✓ Shorten fermentation times

- Stop bulk at 50-60% rise instead of 75%
- Cold proof 12-18 hours instead of 36-48

✓ **Use cooler water when mixing**

- Keeps fermentation slower and more controlled

✓ **Feed starter regularly**

- Keep it healthy and balanced
- Don't let it get too acidic

✓ **Ferment in cooler spot**

- 68-72°F instead of 75-80°F
- Slower, less acidic fermentation

PROBLEM #11: NOT SOUR AT ALL

[No photo needed - taste issue]

WHAT YOU'RE EXPERIENCING:

- Bread tastes like white bread
- No tang whatsoever
- Missing that sourdough flavor
- Could be from a store

WHAT CAUSED THIS:

Most likely: Underfermented

- Didn't ferment long enough for acid to develop
- Rushed through bulk
- Short cold proof

Could also be:

Very young starter

- Starter only 1-2 weeks old
- Hasn't developed complex bacteria culture yet

Too cold during fermentation

- Very cold kitchen
- Slow fermentation, less acid production

HOW TO FIX IT NEXT TIME:

✓ **Longer fermentation**

- Let bulk go to 75% rise
- Cold proof 24-36 hours instead of 12-18

✓ **Let starter mature**

- Starter gets more complex flavor after 2-3 months
- Keep feeding it, be patient

✓ **Warmer fermentation**

- 72-75°F is good for flavor development

✓ **Add small amount of rye**

- 10-15% rye flour adds tang
- Ferments more actively

PROBLEM #12: SCORING TORE AND BLEW OUT

[LARGE PHOTO: Loaf with jagged, torn score that blew out in random directions]

WHAT YOU'RE SEEING:

- Score line is ragged and torn
- Bread burst open in weird places
- Looks messy and uncontrolled
- Might have blown out on the sides instead of the score
- Not a clean, deliberate opening

WHAT CAUSED THIS:

Most likely: Overproofed

- Final proof went too long
- Gluten weakened
- Couldn't contain oven spring
- Burst randomly

Other causes:

Dull blade

- Couldn't cut cleanly
- Dragged and tore instead

Wrong angle

- Scored straight down (90°) instead of at angle
- Didn't create a "flap" of dough

Not enough surface tension

- Poor shaping
- No tight skin to control where it opens

Scored too shallow

- Bread found its own weak point to burst through

HOW TO FIX IT NEXT TIME:

✓ Don't overproof

- Bake from cold (straight from fridge)
- Or stop room temp proof earlier
- Slightly underproofed is better for scoring

✓ Use fresh, sharp blade

- New razor blade or fresh lame
- Should cut like butter, not drag

✓ Score at 30-45° angle

- Not straight down
- Creates a "flap" that opens nicely

✓ Better surface tension during shaping

- Tight skin helps control where bread opens

✓ Score deep enough

- ½ inch deep
- One confident, decisive slash

PROBLEM #13: NO "EAR" ON THE SCORE

[LARGE PHOTO: Loaf with flat score line, no lifted flap/ear]

WHAT YOU'RE SEEING:

- Score opened but didn't create an "ear" (the lifted ridge)
- Flat opening instead of dramatic lifted flap
- Looks okay but not as impressive as you wanted
- No height to the score

WHAT CAUSED THIS:

Most likely: Wrong scoring angle

- Scored too vertical (straight down)
- Need to score at lower angle (30-45°)

Could also be:

Overproofed

- No energy left for oven spring
- Can't create lift

Not enough steam

- Crust set too fast
- Couldn't expand and lift

Scored too shallow

- Didn't cut deep enough to create flap

HOW TO FIX IT NEXT TIME:

✓ Score at 30-45° angle

- This is the key to an ear
- Blade almost parallel to surface
- Creates a flap that lifts

✓ Don't overproof

- Slight underproof actually gives better ear
- More oven spring energy

✓ Ensure good steam

- Bake covered first 20 minutes
- Keeps crust soft so it can lift

✓ Score confidently

- One smooth, deliberate cut
- ½ inch deep
- Don't hesitate

PAGE 6: LEARNING FROM FAILURES

The Path to Better Bread

EVERY "FAILED" LOAF TEACHES YOU SOMETHING

Your first loaf: Will probably have multiple issues. That's normal.

Your third loaf: You'll fix some issues, discover new ones.

Your fifth loaf: You'll start to understand your dough.

Your tenth loaf: You'll have consistent good results.

Your twentieth loaf: You'll be troubleshooting like a pro.

KEEP A BAKING LOG

For each bake, note:

☐ Date and time ☐ Kitchen temperature
☐ Starter feeding time and ratio ☐ Bulk fermentation duration ☐ How dough looked/felt at shaping ☐ Cold proof duration ☐ Final result (photo if possible) ☐ What went well ☐ What to change next time

After 5-10 loaves, patterns will emerge.

You'll notice:

- "When I ferment for 5 hours, it's always too much"
- "My kitchen is warmer than I thought"
- "I need to shape with more tension"
- "72 hours cold proof is my sweet spot"

This log is gold. Keep it.

THE MOST COMMON BEGINNER MISTAKES (IN ORDER)

1. Underfermented bulk (by far #1)

- Solution: Be patient, watch for 50-75% rise

2. Weak or inactive starter

- Solution: Feed regularly, use when peaked

3. Poor shaping / no surface tension

- Solution: Practice, watch videos, drag-and-rotate

4. Underbaked

- Solution: Go for deep golden brown, internal temp 205°F

5. Not enough flour in banneton

- Solution: Use WAY more flour, consider rice flour

6. Scoring issues

- Solution: Sharp blade, 30-45° angle, ½" deep

DON'T CHASE PERFECTION ON LOAF #1

Your goals should be:

Loaf #1-3: Make edible bread, learn the process **Loaf #4-6:** Improve one thing each time **Loaf #7-10:** Start getting consistent **Loaf #10+:** Refine and perfect

Comparison is the thief of joy. Don't compare your loaf #2 to someone's loaf #200 on Instagram.

THE QUESTIONS TO ASK AFTER EACH BAKE

1. Did the dough pass the windowpane test?

- If no → Work on gluten development next time

2. Did bulk fermentation rise 50-75%?

- Too little → ferment longer next time
- Too much → ferment shorter next time

3. Did the poke test show slow spring-back?

- Too fast → ferment longer
- No spring → you went too far

4. Was the surface tension tight after shaping?

- If no → focus on shaping technique

5. Was the oven and Dutch oven fully preheated?

- If no → give it the full hour next time

6. Did I bake until deep golden brown?

- If no → bake longer next time

Answer these honestly and you'll improve fast.

WHAT SUCCESS LOOKS LIKE

A "successful" sourdough loaf:

✓ Has good oven spring (rose up nicely) ✓ Has an open, irregular crumb (holes of various sizes) ✓ Has good crust color (deep golden brown) ✓ Has a crispy crust and tender crumb ✓ Tastes complex with a pleasant tang ✓ You're proud to share it

It doesn't need to:

- Look like a professional bakery loaf
- Have giant holes
- Have a perfect ear
- Win Instagram

If it tastes good and you learned something, it's a success.

RESOURCES FOR WHEN YOU'RE STUCK

Come see us:

- Email: [your email]
- Phone: [your phone]
- Visit SLO Food Market

We're here to help. Bring photos of your crumb, describe what happened, and we'll troubleshoot together.

You're not alone in this journey.

REMEMBER: EVEN PROFESSIONAL BAKERS HAVE OFF DAYS

We've been baking sourdough for years at SLO Food Market.

We still occasionally get:

- Loaves that spread too much
- Weird blowouts
- Overly sour batches
- Dense spots

The difference is: We know why it happened and how to fix it.

You'll get there too. Just keep baking.

YOUR NEXT STEPS

After a "failed" loaf:

Step 1: Don't throw it away - eat it and enjoy it anyway

Step 2: Find the problem in this troubleshooting guide

Step 3: Write down what to change next time

Step 4: Make another loaf and apply what you learned

Step 5: Repeat until bread is consistently good

This is the path. There are no shortcuts, but it's worth it.

FINAL THOUGHT:

The bread you make at home, even if imperfect, is:

- Fresher than anything you can buy
- Made with better ingredients
- Free of preservatives and additives
- Made with your own hands
- A source of pride and satisfaction

Keep going. You've got this.

[End of Section 10]

SECTION 11: NOTES & TRACKING

SECTION 11: NOTES & TRACKING
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PAGE 1: WHY TRACK YOUR BAKES

Documentation Leads to Improvement

Keep notes, spot patterns, get better faster

WHY BOTHER WRITING IT DOWN?

Because your memory lies.

After 5 loaves, you won't remember:
- Which one was bulk for 5 hours vs. 6 hours
- What your kitchen temp was in October vs. December
- Whether the dense loaf was the one with the new flour or the old flour
- How long that perfect loaf cold proofed

Written records reveal patterns you'd never notice otherwise.

WHAT YOU'LL DISCOVER BY TRACKING

After logging 10 bakes, you'll know:

✓ **Your kitchen's actual fermentation time**
- Not the recipe's time - YOUR time in YOUR kitchen

✓ **Your ideal cold proof window**
- Maybe 18 hours is your sweet spot
- Or maybe you prefer 36 hours for more sour

✓ **How different flours perform**
- "King Arthur needs 5 hours bulk, Central Milling needs 5.5"

✓ **Seasonal adjustments needed**
- "Summer: use cool water, 4 hour bulk"
- "Winter: use warm water, 7 hour bulk"

✓ **What works and what doesn't**
- Clear cause-and-effect relationships

This knowledge is gold. It's personalized to you, your kitchen, your schedule.

HOW TO USE THIS SECTION

Simple approach:

1. **Fill out a bake log for each loaf** (Page 2-3)
2. **Take a crumb shot** (cross-section photo)
3. **Note what went well and what to change**
4. **Review logs periodically** to spot patterns
5. **Adjust your process** based on what you learn

That's it. You don't need fancy tracking or spreadsheets.

Just consistent notes after each bake.

WHAT TO TRACK (AT MINIMUM)

The essentials:

☐ Date
☐ Kitchen temperature
☐ Bulk fermentation duration
☐ Cold proof duration
☐ Final result (photo)
☐ One thing that went well
☐ One thing to change next time

That's 2 minutes of writing per bake.

Worth it for the improvement you'll see.

TIPS FOR SUCCESSFUL TRACKING

✓ **Fill it out right after baking** - while it's fresh

✓ **Be honest** - note failures, don't hide them

✓ **Take photos** - crumb shots are invaluable

✓ **Keep it simple** - don't overthink it

✓ **Review every 5-10 loaves** - look for patterns

✓ **Bring your log to class** - we can troubleshoot together

THIS SECTION INCLUDES:

- **Bake Log Template** (Pages 2-3) - Detailed tracking for each loaf
- **Quick Log** (Page 4) - Simplified version
- **Multiple Bake Tracker** (Page 5) - Compare multiple loaves at a glance
- **Personal Recipe Notes** (Page 6) - Document your variations
- **Progress Tracker** (Page 7) - Track improvement over time
- **Blank Notes Pages** (Pages 8-10) - For anything else

Make copies of these pages. You'll use them over and over.

PAGE 2-3: DETAILED BAKE LOG TEMPLATE

Bake Log #_____

Use one log per loaf - make copies of this page

BASIC INFO

Date: _____ **Loaf #:** _____ (first loaf? tenth? hundredth?)

Recipe/Source: _____

Kitchen Temperature: _____ °F

Weather/Season: ☐ Hot/Humid ☐ Warm ☐ Cool ☐ Cold/Dry

STARTER

Starter Name: _____ (if you named it!)

Last Fed: _____ (date/time)

Feeding Ratio: ☐ 1:1:1 ☐ 1:5:5 ☐ Other: _____

Time from feeding to use: _____ hours

Starter condition when used:
- ☐ Doubled in size
- ☐ Domed top
- ☐ Very bubbly
- ☐ Passed float test easily
- ☐ Pleasant smell

Notes: _____

DOUGH MIXING

Time mixed: _____

Ingredients:
- Starter: _____ g
- Water: _____ g (temp: _____ °F)
- Bread flour: _____ g (brand: _____)
- Whole wheat: _____ g (if any)
- Salt: _____ g

Total dough weight: _____ g

Hydration: _____ % (if you calculated it)

Mix method: ☐ By hand ☐ Stand mixer ☐ Other: _____

Notes: _____

GLUTEN DEVELOPMENT

Method: ☐ Stretch & fold ☐ Slap & fold ☐ Coil folds ☐ Kneading

Number of folds/sessions: _____

Times:
- Fold #1: _____
- Fold #2: _____
- Fold #3: _____
- Fold #4: _____

Windowpane test result: ☐ Pass ☐ Fail ☐ Didn't test

After which fold did it pass? _____

Dough feel: ☐ Smooth ☐ Slightly rough ☐ Very sticky ☐ Stiff ☐ Perfect

Notes: _____

BULK FERMENTATION

Start time: _____

End time: _____

Total duration: _____ hours _____ minutes

Fermentation location: ☐ Counter ☐ Warm spot ☐ Oven w/light ☐ Other: _____

Approximate temp: _____ °F

Rise achieved: ☐ 25% ☐ 50% ☐ 75% ☐ 100%+ ☐ Not sure

Poke test result:
- ☐ Sprang back fast (underfermented)
- ☐ Sprang back slowly (perfect)
- ☐ Didn't spring back (overfermented)

Dough appearance:
- ☐ Jiggly

- ☐ Bubbly surface
- ☐ Domed
- ☐ Smelled good

Notes: _____

SHAPING

Time shaped: _____

Pre-shape rest (bench rest): _____ minutes

Shaping technique: ☐ Boule ☐ Batard ☐ Other: _____

Surface tension: ☐ Tight ☐ Moderate ☐ Loose ☐ Tore

How did it feel? _____

Banneton prep: ☐ Rice flour ☐ Wheat flour ☐ Liner ☐ Bare

Amount of flour: ☐ Light ☐ Moderate ☐ Heavy (should be heavy!)

Notes: _____

FINAL PROOF

Start time: _____

Location: ☐ Fridge ☐ Room temp ☐ Both

If cold proofed:
- Time in: _____
- Time out: _____
- Total: _____ hours

If room temp proofed:
- Duration: _____ hours
- Temperature: _____ °F

Poke test before baking:

- ☐ Sprang back fast (under)
- ☐ Sprang back slowly (perfect)
- ☐ Didn't spring back (over)

Notes: _____

BAKING

Oven preheat time: _____ minutes at _____ °F

Dutch oven preheated? ☐ Yes ☐ No

Time loaded: _____

Scoring:
- Pattern: ☐ Single slash ☐ Cross ☐ Other: _____
- Angle: ☐ 30-45° ☐ 90° (straight down)
- Depth: ☐ Deep (½") ☐ Shallow ☐ Too deep

Bake times:
- Covered: _____ minutes at _____ °F
- Uncovered: _____ minutes at _____ °F
- Total: _____ minutes

Internal temp when removed: _____ °F (if checked)

Crust color: ☐ Pale ☐ Golden ☐ Deep golden ☐ Dark ☐ Burnt

Notes: _____

PAGE 3: BAKE LOG (CONTINUED) - RESULTS

FINAL RESULTS

Cooling time before cutting: _____ hours

Overall loaf appearance:

Height: ☐ Tall ☐ Average ☐ Flat

Shape: ☐ Round ☐ Spread out ☐ Lopsided ☐ Good

Oven spring: ☐ Excellent ☐ Good ☐ Minimal ☐ None

Scoring result:
- ☐ Clean opening
- ☐ Nice "ear"
- ☐ Blew out
- ☐ Didn't open much
- ☐ Tore

CRUST

Color: ☐ Too pale ☐ Perfect golden ☐ Too dark ☐ Burnt spots

Texture: ☐ Crispy ☐ Chewy ☐ Soft ☐ Too hard

Thickness: ☐ Thin ☐ Just right ☐ Too thick

Sound when tapped: ☐ Hollow ☐ Dull

Notes: _____

CRUMB

Crumb structure:
- ☐ Open, irregular holes (target!)
- ☐ Tight, dense
- ☐ Huge holes with dense spots (uneven)
- ☐ Gummy
- ☐ Perfect

Texture:
- ☐ Light and airy
- ☐ Chewy
- ☐ Dense
- ☐ Gummy/underbaked
- ☐ Dry

Color: ☐ Creamy white ☐ Tan ☐ Gray

Alveoli (holes): ☐ Tiny ☐ Small-medium ☐ Large ☐ Giant ☐ Mixed

Distribution: ☐ Even throughout ☐ Uneven (big on top, dense on bottom)

FLAVOR & AROMA

Flavor:
- ☐ Not sour enough
- ☐ Perfect tang
- ☐ Too sour
- ☐ Bland
- ☐ Complex and delicious

Aroma: _____

How did it taste? _____

Toasted vs. fresh: Which did you prefer? _____

PHOTO

Crumb shot attached? ☐ Yes ☐ No

Photo file name: _____

(Take a photo of the cross-section and note where you saved it)

OVERALL RATING

Rate this loaf: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 (stars)

Best thing about this loaf: _____

Biggest problem: _____

WHAT WENT WELL

List 2-3 things you did right:

1. _____

2. _____

3. _____

WHAT TO CHANGE NEXT TIME

List 2-3 specific changes:

1. _____

2. _____

3. _____

ADDITIONAL NOTES

_____
_____
_____
_____
_____

PAGE 4: QUICK BAKE LOG

Simplified Tracking - One Page Per Loaf

For when you want to track but don't need all the details

Loaf #: _____ **Date:** _____ **Kitchen Temp:** _____°F

STARTER
Fed at: _____ | Used at: _____ | Condition: ☐ Great ☐ OK ☐ Weak

MIX
Time: _____ | Flour: _____ | Hydration: _____%

BULK
Start: _____ | End: _____ | Duration: _____ hrs | Rise: ☐ 50% ☐ 75% ☐ 100%+

SHAPE
Time: _____ | Tension: ☐ Good ☐ OK ☐ Poor

PROOF
Cold: _____ hrs | OR Room temp: _____ hrs

BAKE
Covered: _____ min | Uncovered: _____ min | Temp: _____°F

RESULTS:

Oven spring: ☐ Great ☐ Good ☐ Poor

Crumb: ☐ Open ☐ Tight ☐ Uneven ☐ Gummy

Flavor: ☐ Perfect ☐ Not sour enough ☐ Too sour

RATING: ☐ ★ ☐ ★★ ☐ ★★★ ☐ ★★★★ ☐ ★★★★★

What worked: _____

Change next time: _____

PAGE 5: MULTIPLE BAKE COMPARISON

Track Several Loaves at a Glance

Use this to compare variables across multiple bakes

LOAF #	DATE	BULK (hrs)	COLD PROOF (hrs)	KITCHEN TEMP	RESULT	NOTES
1				☐	★★★★★	
2				☐	★★★★★	
3				☐	★★★★★	
4				☐	★★★★★	
5				☐	★★★★★	
6				☐	★★★★★	
7				☐	★★★★★	
8				☐	★★★★★	
9				☐	★★★★★	
10				☐	★★★★★	

PATTERNS I'M NOTICING:

After 5+ loaves, what trends do you see?

_____
_____
_____

MY KITCHEN'S "NORMAL":

Typical bulk time: _____ hours

Typical cold proof: _____ hours

Best results when: _____

PAGE 6: PERSONAL RECIPE VARIATIONS

Document Your Experiments

When you start tweaking recipes, track what works

VARIATION #1

Name/Description: _____

Base recipe: _____

What I changed:
- _____
- _____
- _____

Result: ☐ Success ☐ Failure ☐ OK

Would I make this again? ☐ Yes ☐ No ☐ With changes

Notes: _____

VARIATION #2

Name/Description: _____

Base recipe: _____

What I changed:
- _____
- _____
- _____

Result: ☐ Success ☐ Failure ☐ OK

Would I make this again? ☐ Yes ☐ No ☐ With changes

Notes: _____

VARIATION #3

Name/Description: _____

Base recipe: _____

What I changed:
- _____
- _____
- _____

Result: ☐ Success ☐ Failure ☐ OK

Would I make this again? ☐ Yes ☐ No ☐ With changes

Notes: _____

MY FAVORITE MODIFICATIONS

After experimenting, what have you learned?

Best flour blend: _____

Ideal hydration for me: _____%

Favorite add-ins: _____

Timing that works best: _____

Notes: _____

PAGE 7: PROGRESS TRACKER

Watch Yourself Improve

Track your journey from beginner to confident baker

MILESTONE CHECKLIST

Check off as you accomplish each milestone:

BEGINNER MILESTONES

☐ Made my first loaf (even if imperfect)
☐ Starter doubled reliably after feeding
☐ Dough passed windowpane test
☐ Got 50-75% rise during bulk
☐ Successfully shaped a boule
☐ Bread came out of banneton without sticking
☐ Scored without major tears
☐ Loaf had decent oven spring
☐ Family/friends said it was delicious

INTERMEDIATE MILESTONES

☐ Made 10 loaves
☐ Got consistent results (3+ good loaves in a row)
☐ Understood my kitchen's timing
☐ Achieved open, irregular crumb
☐ Made bread on a schedule that fit my life
☐ Troubleshot a problem successfully on my own
☐ Got a nice "ear" on the score
☐ Experimented with different flours
☐ Adapted a recipe to my preferences

ADVANCED MILESTONES

☐ Made 25 loaves
☐ Baked with 75%+ hydration
☐ Tried different shapes (batard, etc.)
☐ Made bread with inclusions (nuts, cheese, etc.)
☐ Taught someone else to bake sourdough
☐ Made consistent 5-star loaves
☐ Developed my own recipe variation
☐ Gave bread as gifts with pride
☐ Considered myself a "bread baker"

SKILL DEVELOPMENT TRACKER

Rate yourself (1-5) at different points in your journey:

	After Loaf #5	After Loaf #15	After Loaf #30
Starter maintenance	☐ 1 2 3 4 5	☐ 1 2 3 4 5	☐ 1 2 3 4 5
Mixing & gluten development	☐ 1 2 3 4 5	☐ 1 2 3 4 5	☐ 1 2 3 4 5
Recognizing fermentation stages	☐ 1 2 3 4 5	☐ 1 2 3 4 5	☐ 1 2 3 4 5
Shaping technique	☐ 1 2 3 4 5	☐ 1 2 3 4 5	☐ 1 2 3 4 5
Scoring	☐ 1 2 3 4 5	☐ 1 2 3 4 5	☐ 1 2 3 4 5
Baking & timing	☐ 1 2 3 4 5	☐ 1 2 3 4 5	☐ 1 2 3 4 5
Troubleshooting	☐ 1 2 3 4 5	☐ 1 2 3 4 5	☐ 1 2 3 4 5
Confidence	☐ 1 2 3 4 5	☐ 1 2 3 4 5	☐ 1 2 3 4 5

REFLECTIONS

After 5 loaves:

What's clicking: _____

What's still confusing: _____

After 10 loaves:

Biggest improvement: _____

Still working on: _____

After 20 loaves:

What I've mastered: _____

Next challenge: _____

After 30+ loaves:

How has sourdough changed for you?

_____
_____
_____

PAGE 8-10: BLANK NOTES PAGES

Additional Space for Your Observations

Use these pages for whatever you need

Ideas for what to track here:

- Seasonal observations (how your bakes change through the year)
- Flour comparisons (testing different brands)
- Hydration experiments
- Troubleshooting specific recurring problems
- Questions to ask at the next class
- Recipe ideas and inspiration
- Feedback from people who ate your bread
- Photos and sketches
- Timing templates for your specific schedule
- Anything else!

BLANK NOTES

Date: _____

Topic: _____

_____
_____
_____
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_____

_____
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_____
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_____
_____

PAGE 11: FINAL PAGE - YOUR SOURDOUGH JOURNEY

Looking Back, Looking Forward

WHEN YOU STARTED:

Date of first loaf: _____

Why you wanted to learn sourdough:

_____
_____

Your biggest worry at the start:

_____

NOW:

Total loaves baked: _____

Favorite loaf so far: Loaf #_____ (why?)

_____

Biggest lesson learned:

_____

_____

Most surprising discovery:

_____

WHAT SOURDOUGH HAS GIVEN YOU:

☐ Connection to an ancient tradition
☐ Better understanding of food and fermentation
☐ Pride in making something with your hands
☐ Patience and presence (you can't rush bread)
☐ Something meaningful to share with others
☐ A creative outlet
☐ Confidence in the kitchen
☐ Fresh, delicious bread
☐ Community (other bread bakers)
☐ A new passion
☐ Other: _____

WHERE YOU'RE HEADED:

Next skill to master: _____

Recipe you want to try: _____

Someone you want to teach: _____

A NOTE TO YOUR FUTURE SELF:

One year from now, what do you hope to remember about learning sourdough?

_____
_____
_____
_____
_____

FROM THE SLO FOOD MARKET TEAM:

We're so proud of you for taking this journey.

Every loaf you bake connects you to thousands of years of bakers who came before. You're part of that tradition now.

Keep baking. Keep learning. Keep sharing.

And when you're ready for the next challenge, we'll be here.

Welcome to the community of bread bakers.

— Scott and the SLO Food Market Team

STAY IN TOUCH:

Email: [your email]
Phone: [your phone]
Visit us at: SLO Food Market

Share your bread with us!
Tag us on social media or bring a loaf by the bakery.
We'd love to see what you're making.

[End of Section 11]