Mastering Sourdough

- Sourdough as a Meditation
- The Science of Sourdough
- How to Start a Sourdough Starter
- Cultivating and Maintaining a Healthy Starter
- Baking Equipment
- Baking Ingredients
- Recipe Reading
- Master Recipe and Baking Process

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Knead Your Way Through Tough Times

- Refocus
- Nurture
- Unite
- Create
- Connect
- Heal
Sourdough Science

- Sourdough is a perpetual culture of yeast and bacteria.
- Both the yeast and bacteria thrive on sugar and starch.
- Yeast produce carbon dioxide.
- Lactic acid bacteria produce acids.
- Wheat protein components (glutenin and gliadin) provide structure.
- Balance is crucial.
Three Ways to Start a Sourdough Starter

- Buy
- Borrow
- Trap Wild Yeast
Caring for a **New** Sourdough Starter

- Keep it small.
- Keep it at room temperature.
- Discard and feed daily.
- Use equal weight flour to water (100% hydration).
- Keep your jar clean.
- Let it breathe.
- Watch it closely.
- Increase feedings as activity increases.
- Build it up when it's ready.
- Time how long it takes to double in volume.
- Use it and feed it frequently.
- If you can't use it, store it in the refrigerator.
Caring for an Established Starter Is Simple

- Feed it prior to baking.
- Use it as often as possible but always reserve a little.
- Always feed the part you reserved.
- Store it in the refrigerator when you won't be baking.
- Repeat!
How To Feed Your Starter

1. Determine how much fresh starter you need (e.g. 300 grams).
2. Measure 50% flour and 50% water (e.g. 150 grams each) and mix into a slurry.
3. Add a small portion of fermented starter (~20% of the weight from Step 1, e.g. 60 grams) reserved from your previous batch and mix well.
4. Put starter in a clean jar.
5. Ferment at room temperature.
6. Use active starter in your recipe leaving a little in the jar.
7. Feed reserved starter again.
8. Refrigerate starter for up to one week or use it again and repeat this process.
Signs of a Healthy Starter

- Doubling or tripling in volume within 4 to 8 hours of every feeding.
- Bubbly appearance.
- Yeasty, sweet smell.
- Peaking in the jar within 12 hours.
Active Starter

- Is at its height of fermentation.
- Is very bubbly.
- Can be used in all baking projects.
- Is best for less sour breads.
- Still smells yeasty and sweet.

5 hours
Peaked Starter

- Is fully fermented.
- Is hungry and ready.
- Can still be used in many baking projects.
- Is still slightly bubbly, not completely deflated.
- Smells yeasty and slightly sour.
- Great for sour breads.
- Can be used in any recipe that calls for discard.
Signs You Need to Feed Your Starter

- It's completely deflated.
- There are no bubbles.
- A gray liquid called hootch has accumulated on top of your starter.
- It smells sour and alcoholic.
- It's been kept at room temperature for more than 24 hours.
- It's been kept under refrigeration for more than one week.
Make sure your jar will accommodate a tripled starter.

Pay extra attention in warm weather.

Don't turn your back!
How Much Starter Should You Keep On Hand?

Option 1

Keep a small starter (50-100 grams) and feed it as needed.

- A great option for the occasional baker.
- A small starter is kept stored under refrigeration. When needed, the starter is built up over the course of a day or two prior to being used.

Pros: Less space needed, less potential waste.

Cons: Starter is not available for immediate use, requires planning ahead.
How Much Starter Should You Keep On Hand?

Option 2

Keep a large starter (300-500 grams) and use it liberally.

- Works well for people who have many baking projects.
- A large starter is built up before refrigeration and is available to use almost immediately.

Pros: Lots of starter on hand for crackers, crepes, and most breads.

Cons: Takes more space in the refrigerator, can lead to potential waste if not used in a timely manner.
Sourdough Baking Equipment

My top ten!

- Salter Digital Scale
- Glass Mixing Bowls
- Wooden Spoons
- Danish Dough Whisk
- Stainless Bench Scraper
- Banneton
- Dutch Oven
- Bread Lame
- Parchment Paper
- Locking Lid Jar
Sourdough Baking Ingredients
Flour, Water, Salt, and Starter
that's all you need!

- Organic, unbleached, and unbromated flour
- High-protein flour for gluten development
- Heirloom grains add flavor and nutrition
- Add-ins
- Local mills in your area
Reading and Executing Sourdough Recipes

- Always read the recipe completely.
- Arrange all your ingredients and equipment.
- Set timers.
- Take notes.
- Take pictures.
- Join groups to ask questions.
- Weigh everything.
- If you measure by volume, know that you may need to make some tweaks.
- Use your intuition.
- Always adjust as you go.
The Twelve Steps of Sourdough Bread Baking

1. Scaling
2. Mixing
3. Kneading
4. Fermenting
5. Deflating/Punch down
6. Scaling/Rounding/Resting
7. Shaping/Makeup
8. Proofing
9. Scoring
10. Baking
11. Cooling
12. Storing
Confusing Terminology

- Active starter/starter/discard
- Proofing/proving/bulk fermenting
- Hydration percentages/baker's percentages
## Sourdough Bread Master Recipe

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Grams</th>
<th>Ounces</th>
<th>Volume</th>
<th>Baker's Percentage</th>
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<tr>
<td>Flour</td>
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<td>3 1/4 cup</td>
<td>100.00%</td>
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<tr>
<td>Water</td>
<td>296</td>
<td>10.4</td>
<td>1 1/4 cup</td>
<td>65.05%</td>
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<tr>
<td>Active Starter, 100% Hydration</td>
<td>125</td>
<td>4.4</td>
<td>1/2 cup</td>
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<td>Salt</td>
<td>12</td>
<td>0.4</td>
<td>2 teaspoons</td>
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<tr>
<td><strong>Total Formula</strong></td>
<td>888</td>
<td>31.2</td>
<td></td>
<td>195.15%</td>
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</tbody>
</table>
The Sourdough Baking Process — Step 1

Scaling (Weighing) or Measuring Ingredients

- Start with your scale set to zero grams.
- Add ingredients one at a time.
- Start with the water.
- Remember that weighing ingredients is most accurate.
The Sourdough Baking Process  —  Step 2

Mixing Ingredients

- Incorporate all the ingredients into a loose shaggy dough.

- Use your hands to knead the dough gently until a cohesive dough forms.

- Let the dough rest for about 5 minutes before proceeding.
Once the dough has rested you can begin the simple process of kneading in the bowl.

If you are using a stand mixer, you can achieve a similar result by mixing the dough in 1-minute intervals with rest periods between each mixing.
With wet hands lift one side of the dough up and fold it over the center. Press it down firmly to seal.
• Turn the bowl a quarter turn and repeat this process until a smooth dough forms.
Once the dough is smooth and elastic, gather it into a ball and let it rest for 5 to 10 minutes.
Using wet hands, remove the dough from the bowl and knead it on a clean smooth work surface.

Notice the dough is much more smooth and gluten is developing nicely.
Cover and ferment the dough overnight (8 to 10 hours, or until doubled in size).
Q. How long is a typical bulk fermentation?
A. It depends on factors like:

- Temperature and humidity.
- Ingredients.
- Starter strength.
- The astrological positions (just kidding, but sometimes it feels that way!)
Variables During Bulk Fermentation

Proofing speeds up with:

- Warmer temperature (68 to 78°F).
- More starter.
- Very strong starter.
- Ingredients (a little sugar, milk, or butter).

Proofing slows down with:

- Cooler temperature (58 to 68°F).
- Less starter.
- Weak starter.
- Refrigeration.
- Ingredients (a lot of sugar/honey or too much salt).
Overproofing During Bulk Fermentation

- Unbalanced starters overproof easily.
- Watch the time and temperature.
Well-balanced sourdough cultures don't overproof easily.
Traditional Boule

- A simple yet classic loaf.
- Perfect for beginners or experts.
- Shaped in a basket called a banneton.
Notice the dough has doubled in size, is full of gas, and is very smooth and stretchy.

Scaling into portions and pre-shaping (rounding) would be done after deflating (punch down) and before final shaping.
• Clean the banneton basket with a stiff brush to remove residual flour.
• Prepare the banneton with a generous coating of flour.
• Turn the dough out onto a clean surface.

• Using a similar technique as stretch-and-fold, gather the dough toward the middle.

• Don't overwork the dough. If the skin starts to rip you have gone too far; stop and let the dough rest.
• Shape the dough into a tight round ball by using tension against your work surface.

• Let it rest on the bench seam side down for 5 minutes.
Add the dough, seam side up, to the prepared banneton basket.

Sprinkle the top with flour; it will end up as the bottom of the loaf.

Cover the dough and let it double at room temperature.

This step can be done over a longer period in the refrigerator.
Allow the dough to double in size

from this
↓

to this
↓
Overproofing After Shaping

Signs your dough has proofed too long:

• Starting to deflate.
• Slack, loose, and flabby.
• Loses shape when removed from banneton.
• Little to no oven spring when baked.
• Dense or flat final product.
• Overly sour taste.
Underproofing/Underdevelopment After Shaping

- Not much rise.
- Gummy texture.
- Pale exterior.
The Sourdough Baking Process
Preparing to Bake

- Preheat your oven to 400°F with a lidded Dutch oven inside.
Releasing the Dough From the Banneton

- Cut a piece of parchment paper that will fit your Dutch oven.
- Lay the parchment over the top of the proofed dough.
- Gently hold the parchment flat against the dough as you flip the banneton and release the boule onto the parchment.
Scoring

- Use a bread lame or very sharp knife to cut deeply into the dough.
Baking

- Transfer the dough to the preheated Dutch oven using the parchment paper like a sling.
- Add 3 to 4 ice cubes between the parchment and sides of the Dutch oven.
- Replace the lid on the Dutch oven and bake in the center of the oven for 25 minutes.
• Remove the Dutch oven lid and continue baking for 15 more minutes.
- Remove the boule from the oven when it is dark golden brown.
The Sourdough Baking Process — Step 11

Cooling

- After 5 minutes transfer the boule to a wire rack to cool completely.
- Most sourdough breads benefit from 12-24 hours of cooling.
The Sourdough Baking Process — Step 12

Storing

- Sourdough keeps remarkably well.
- Wrap completely to store.
- Once completely cooled, sourdough can be frozen for up to 3 months.
- Defrost frozen bread on a wire rack at room temperature.
- Don't ever store lean bread in the refrigerator.
BUTTER For All