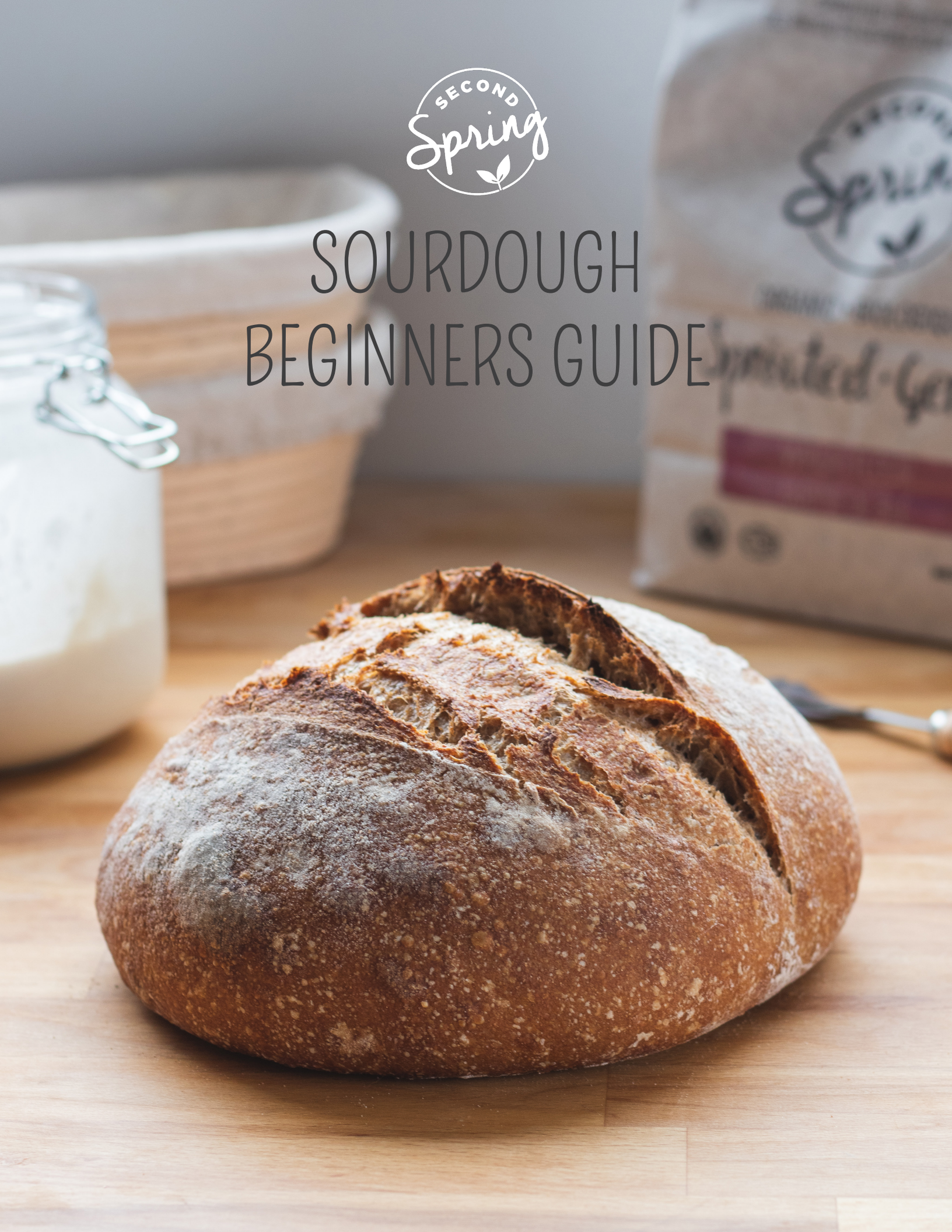
SECOND Spring

SOURDOUGH BEGINNERS GUIDE



BEFORE YOU START

WHAT IS SOURDOUGH?

Welcome to the slow, magical, and rewarding world of sourdough! We're here to help you make naturally fermented bread from scratch, and of course learn how to incorporate sprouted grains.

Sourdough may be trendy now, but it's actually so ancient that no one knows its origin. It's known worldwide for its tangy flavour, digestive benefits and long shelf life.

At its most basic, sourdough has only three ingredients – flour, water and salt. By simply combining flour and water and giving it lots of time to ferment, it captures wild yeast and friendly bacteria. This can leaven bread without commercial yeast, which is why it's known as natural fermentation.

Sourdough starter is a community of living organisms that must be nurtured and can adapt to their environment. This means that your starter will be unique to you, many people even name it like a pet. Starters can be passed down through generations and live for thousands of years.

There is no "right" way to make sourdough. As you can imagine, over millennia people have developed many different methods, and starting out the choices can be overwhelming. With this guide, we are giving you one way of achieving naturally fermented bread, feel free to adapt it to work for you.

Sourdough also takes patience and intuition. Explore, make mistakes and don't get discouraged. If you ask any experienced sourdough baker, they'll tell you that every loaf is an opportunity to learn.

WHY SOURDOUGH?

Like sprouting, sourdough is an ancient method of grain preparation that many people lost touch with as they opted for quick commercial breads. But bakers have been using sourdough for most of human history, and many people are now reconnecting with slower, traditional ways of eating.

During fermentation, dense proteins and complex starches are pre-digested, resulting in bread that many people find gentler on their digestive system. It also improves texture, shelf life, and produces more complex flavours.

Do these benefits sound familiar? Sourdough has many of the same benefits as sprouting, so putting them together yields a delicious, highly digestible loaf.

HOW DOES SOURDOUGH WORK?

Wild yeast and bacteria are all around us — in the air, on surfaces and naturally on grains. When water and flour ferment, wild yeasts and bacterias consume sugars and convert them to lactic and acetic acids. These acids give sourdough its signature tangy flavour, control fermentation and produce carbon dioxide. Different varieties of bacteria and yeast can create distinct flavours, which is why starters made in different regions will be unique. If you move a starter, eventually the varieties in the new environment will take over.

We develop gluten in breads so that it is strong enough to capture the carbon dioxide bubbles, causing the bread to rise. Gluten is made up of two proteins: glutenin makes the dough stretchy (extensible) and gliadin allows the bread to hold its shape (think of a rubber band snapping back). Kneading or folding the dough aligns these two proteins into web. If the gluten isn't strong enough, the air bubbles will collapse and you'd end up with a dense, gummy brick.

This may sound complicated, but we promise mother nature does most of the work! Some bakers like to dive into the chemistry, while others work off experience and intuition. You may understand the "how" and not bake a perfect loaf, or you can go by feeling and still make delicious bread. Sourdough is both a science and an art.

BAKERS MATH

There are often percentages next to the ingredients in sourdough recipes, these are baker's math. The percentages calculate each ingredient in relation to flour, which is always 100%. To do this, the weight of each ingredient is divided by the weight of the flour.

For example, if a recipe uses 1000g of flour and 700g of water, 700 ÷ 1000 = 0.7 or 70% water. Or, if you have 1000g of flour and want 70% hydration (water), 1000 x 0.7 = 700g of water. If you use more than one kind of flour, the combined flour will equal 100%.

Here's an example of a recipe:

Wheat Flour	900g	90%
Rye Flour	100g	10%
Water	700g	70%
Salt	20g	2%
Starter	200g	20%

Why does this matter? When you understand the ingredients in relation to each other, you can predict how a dough may turn out (soft, crusty, rustic, mild, very sour etc.). Baker's math allows you to easily scale a recipe up or down, and it can also help you adjust or develop your own recipes.

Still with us? Don't worry, there isn't a quiz later. Baker's math will start to make more sense once you've got the basics down.

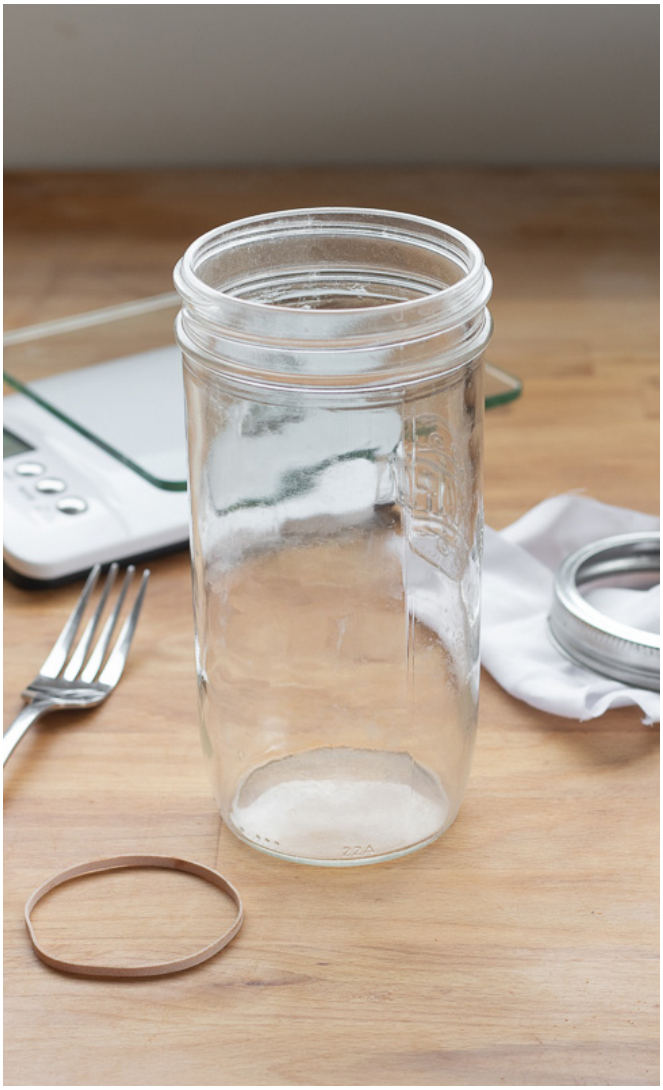
BUILDING A SOURDOUGH STARTER

All sourdough begins with a pre-ferment – a portion of dough that's made ahead of time. You may hear different names like levain, sponge, or mother, but we'll call it a starter. All you need is flour, water, and a bit of patience. There are many kinds of starters, but for now we'll focus on the most common: equal parts flour and water (also called 100% hydration starter).

Starting from scratch, your starter should be ready in about 7 days. If your home is warm it may be faster, cold environments can take up to a few weeks. Once it's ready to use, it can be maintained indefinitely with very little effort.

EQUIPMENT

- Clear container, jar or bowl — Your starter will double (or more) in size, so leave lots of extra space, no one wants a starter volcano!
- Kitchen scale (or measuring cups) — a scale is recommended for accuracy
- Spoon, fork or small spatula to stir
- Elastic band — an easy way mark how much the starter has risen



INGREDIENTS

- Unbleached bread flour (we prefer organic)
- Whole wheat, sprouted wheat or sprouted rye flour — higher in nutrients to give your starter an initial boost
- Water — chlorine can interfere with fermentation so bottled/filtered water or leaving a jug of tap water out overnight is your safest bet

Note: to grow a colony of good bacteria and not the kinds that cause mold, make sure your tools are sanitized with boiling water or in a dishwasher.

“Feeding” a sourdough starter simply means mixing in fresh flour and water. While you’re establishing your starter, you’ll be feeding daily at a 1:1:1 ratio. That is, one part starter, one part flour and one part water (by weight).

In order to keep a manageable amount we “discard”, where you remove some starter that’s no longer needed. This doesn’t need to be wasted, we collect it in a separate container and store it in the fridge. It’s perfect for adding flavour to recipes that use other leavening (like baking soda) including pancakes, muffins, biscuits and more! Discard is also a great way to share your starter with a friend.

DAY 1

50g (about 6 1/2 tbsp) bread flour
50g (about 6 1/2 tbsp) whole wheat/sprouted flour
100g room temperature water

Combine flours and water in a container and mix into a smooth paste (be sure there is no dry flour left). You’re looking for a thick pancake batter consistency, depending on your flour you may need an extra splash of water to achieve this. Cover loosely and allow it to sit at warm room temperature for 24 hours.

A coffee filter or a scrap of fabric secured with an elastic works well as a breathable lid, but you can also just loosely balance the container lid. A warm spot could be on or near an appliance (top of fridge/stove) for ambient heat, or in the oven with just the light on (be very careful not to turn the oven on!)

DAY 2

100g starter
50g (about 6 1/2 tbsp) bread flour
50g (about 6 1/2 tbsp) whole wheat/sprouted flour
100g room temperature water

Approximately 24 hours later, discard half of the starter. You should be left with 100g. Add flours and water and mix thoroughly. You may need to run around the edges of the container with a spatula if it’s starting to get messy. Cover loosely and let it rest for 24 hours.

DAY 3

100g starter
50g (about 6 1/2 tbsp) bread flour
50g (about 6 1/2 tbsp) whole wheat/sprouted flour
100g room temperature water

You may start to see some activity – bubbling, rising or a sour aroma. If not, don’t panic, all starters grow at their own pace. Again, combine starter, flours and water and mix thoroughly. Wrap the elastic band around the jar to mark the level of starter. Cover loosely and rest for 24 hours.

DAY 4 - 7+

100g starter
100g (about 13 tbsp) bread flour
100g room temperature water

Feed the starter as usual, but increase feedings to every 12 hours (rather than 24). You should start to see lots of activity. Your starter should be bubbly and doubling or even tripling in volume. Although it may look ready to use, you want to keep feeding it until it's rising and falling predictably.

During this time your starter may also plateau and have noticeably less activity, this is just the yeast and bacteria adjusting and it is completely normal. Keep feeding on schedule and activity will pick back up again.

HOW TO KNOW WHEN YOUR STARTER IS READY

If after 7 days you don't have consistent activity, don't panic, starters can take up to a few weeks. Once your starter predictably doubles (or more) every 6 - 8 hours, and has signs of good fermentation like lots of bubbles and a sour aroma, it is time to try your first loaf!

Another good indication that your starter is ready is if it passes a "float test", but don't rely on this method alone. Take a spoonful of starter and drop it into some lukewarm water. If it floats, it likely has enough carbon dioxide to leaven dough.

REFRESHING & MAINTAINING YOUR STARTER

When you bake, be sure to save approximately 200g of starter to keep for next time. You can save more, but small amounts can spoil more easily, especially if you don't feed it often.

If you plan to bake several times a week, starter can be left at room temperature and fed every 12-24 hours. When not in use, starter can be stored with and airtight lid in the fridge. A dark liquid may form on top, this is known as hooch and is completely normal, simply stir it back into the mixture. Your starter may also develop a stronger sour aroma, this is also normal. To refresh, feed the starter and leave at room temperature until ready to use.

If left in the fridge for more than a week or two, the yeast and bacteria will have nothing to eat and begin to gradually die off. Unless it shows signs of mold, it is likely still viable, but it will take multiple feedings (every 12 hours) to revive it. The longer it's neglected, the longer it will take to bring it back.

BASIC SPROUTED SOURDOUGH RECIPE

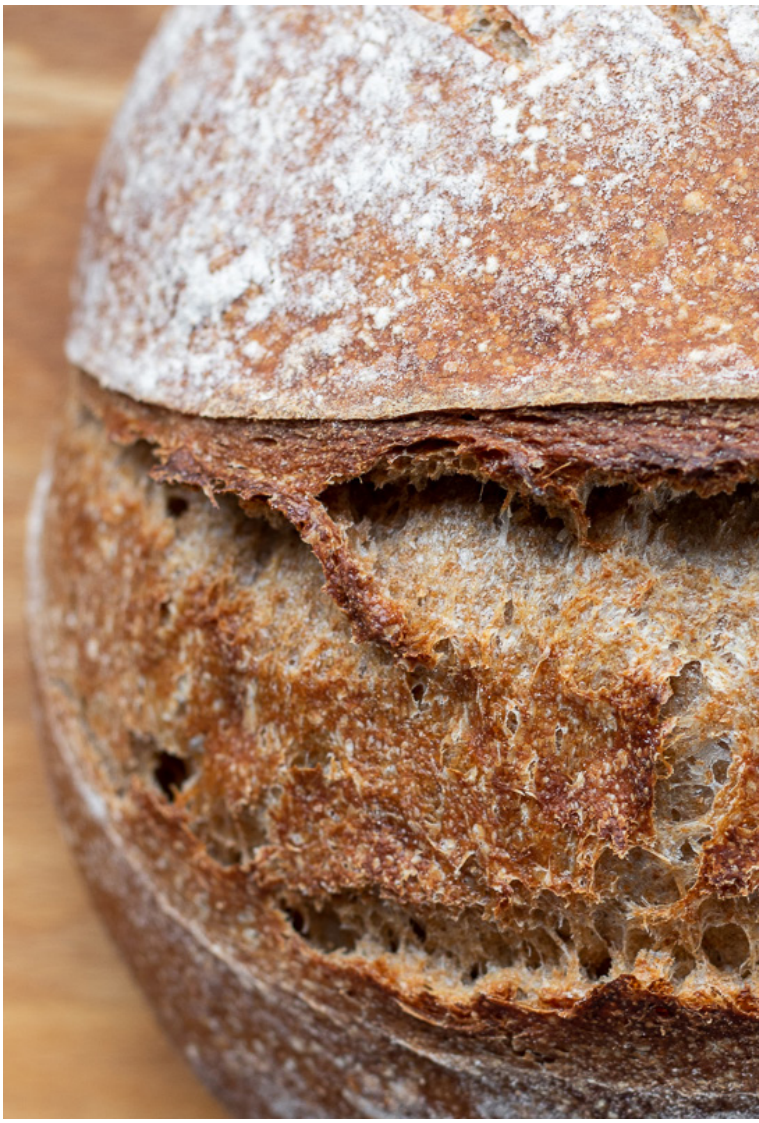
Sprouted wheat sourdough is rich, tangy and naturally sweet. It has a moderate crumb that's perfect for toast, sandwiches, a generous swipe of butter and dunking in soups. Many people shy away from using high percentages of sprouted flour in breads, but we're here to tell you that not only is 100% sprouted sourdough possible, it's nutritious, digestible, and insanely delicious!

We recommend making sprouted sourdough by hand for several reasons: you don't need fancy equipment or challenging techniques and it's gentler for developing gluten with whole grain sprouted flour. In a more romantic sense, baking something entirely by hand allows you to connect to your dough and be more present in the process.

Sourdough is more than following a recipe or method. As with any art, sourdough requires patience and care, and developing a "baker's intuition" takes practice.

OPTIONAL (BUT HELPFUL) EQUIPMENT

- **Kitchen Scale** – We provide volume (cup) measurements, but measuring by gram weight is much more accurate. While not necessary, we highly recommend.
- **Digital Thermometer** – You can measure the temperature of your water, dough and tell exactly when your bread has finished baking. You can do this by sight and feel, but temperature is much more accurate.
- **Dough/Bench Scraper** – Can be used in shaping, if dough sticks to your counter, and for lifting/transferring dough easily.
- **Banneton/Proofing Basket** – Used during the final proof to help the dough keep its shape. A mixing bowl with a lint-free dish towel works well too (for round boules).
- **Bread Lame** (pronounced “lahm”) – Used to score bread. It holds a razor blade, but you can hold a blade in your fingers. You can also use a very sharp knife or scissors.
- **Dutch Oven** – A popular way to bake sourdough, but you can use a regular baking sheet.



STEP 1: WEIGH & MIX INGREDIENTS

450g (3 3/4 cups) sprouted wheat flour
315g (1 1/4 cups + 2 tbsp) warm water
108g (1/2 cup) ripe 100% hydration sourdough starter
9g (1 1/2 tsp) salt

Your starter should be fed in the last 4 - 16 hours and is bubbly, active and ready to use (ripe).

Weigh (recommended) or measure ingredients into a large bowl. Stir with your hands until all the flour is incorporated. A squeezing motion really helps to work in the flour.





STEP 2: STRETCH & FOLD TO DEVELOP GLUTEN STRUCTURE

Sprouted sourdough benefits from gentle handling, so the stretch and fold method is ideal for building structure (gluten) in your dough, instead of kneading or using an electric mixer.

1. With damp or lightly oiled hands, reach under the edge of the dough that is furthest from you. Stretch it up and fold it back over itself. The quicker you work, the less dough will stick to your hands.
2. Rotate the bowl a quarter turn and repeat the stretch and fold. Do this twice more so the bowl makes a full circle.
3. Flip the dough over to the smooth side.

Stretch and fold the dough 3 - 4 times, with a 30 minute rest between each. To check if the 4th fold is needed, do a windowpane test. If you can gently stretch a small piece of dough until it's transparent without ripping, the dough is already strong enough.




STEP 3: BULK PROOFING (FIRST RISE)

Sourdough goes through two stages of fermentation (also called rising or proofing). The first (or bulk) rise should be done at about 30°C, or just warmer than room temperature. A cold oven with just the oven light on works well or a warm spot in your kitchen.

This should take about 2 - 4 hours, your dough is ready when it's risen by about 50%, bubbly, and visibly airy/jiggly. Proofing time can vary depending on temperature, the strength of your starter, etc. The times provided are general guidelines, but pay attention to the descriptions and listen to what your dough is telling you! Sensing when your dough is ready can take practice.

STEP 4: SHAPE




There are many different ways to shape, but for this recipe we used a basic round (boule) technique.

Most bakers use flour on the counter, but we find a light coating of oil sticks less and is easier to clean up. We also use damp or lightly oiled hands.

1. Pat the dough into a circle about the size of a dinner plate.
2. Working your way around the dough, grab small sections and fold them into the center.
3. Flip dough over to the smooth side.
4. Using your hands or a bench scraper, drag the dough across the counter to round. The goal is to create surface tension, but not so much that the dough tears.

Do this twice with a 20 minute rest in between. Place dough into a well floured banneton or bowl lined with a lint-free dish towel with the seams (bottom side) facing up.

STEP 5: FINAL PROOF

Cover and put the dough in the refrigerator overnight (or up to 20 hours), this is called a cold proof. Cold temperatures slow down fermentation, which develops lots of flavour and helps with digestion.

The next day, remove the dough from the fridge and allow it to rest at room temperature for an hour or two, until it springs back slowly when gently poked.

About an hour before you are ready to bake, preheat the oven to 450°F. If you are baking in a dutch oven, place it in the oven while it preheats. If you are baking on a tray, place a small oven safe dish to preheat (this will be filled with water to create steam later).

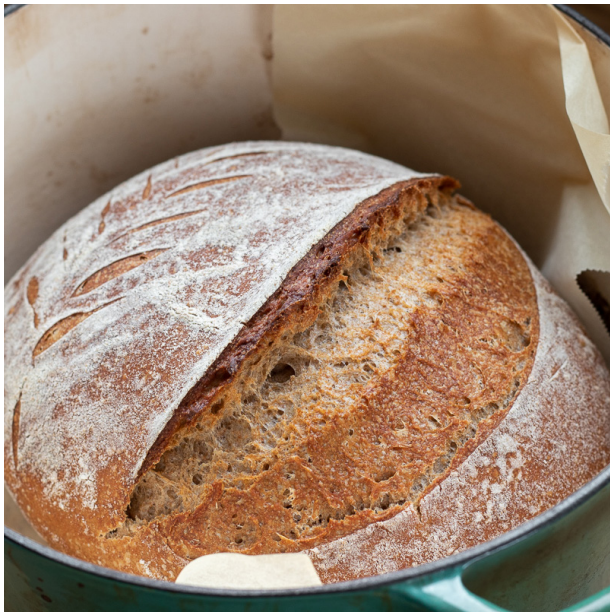
STEP 6: SCORE

We score bread just before baking so that it will expand in a chosen spot and produce a more attractive loaf. If you don't score, the crust will burst and you'll likely end up with a misshapen loaf (it will still taste delicious though!). Scoring was also traditionally used as a baker's signature, a way for people to recognize your art!

Scoring can be done with a baker's lame (pronounced "lahm"), razor blade, VERY sharp knife or even kitchen scissors. We suggest simple cuts for sprouted sourdough. Intricate cuts look beautiful, but each cut deflates the delicate gluten network you've worked so hard to build.

- Turn out the dough onto parchment paper and lightly dust with flour
- Hold your blade at a 45° angle
- Use only one corner of the blade or the tip of a knife, don’t drag the whole blade
- Start at the top and bring the blade towards you in one movement, it helps to think of it as a slitting motion
- Cut about 1/2" deep
- Wait until right before it goes into the oven

STEP 7: BAKE



Once you've scored the bread, carefully place parchment on a tray or in the dutch oven.

Dutch oven: bake for 20 minutes with the lid. Remove the lid and continue to bake another 10-20 minutes, or until your preferred crust colour.

On a tray: Place tray in the oven, pour about 1 cup boiling water in the preheated dish. Remove the water dish after 20 minutes and continue to bake 10-20 minutes, or until your preferred crust colour.

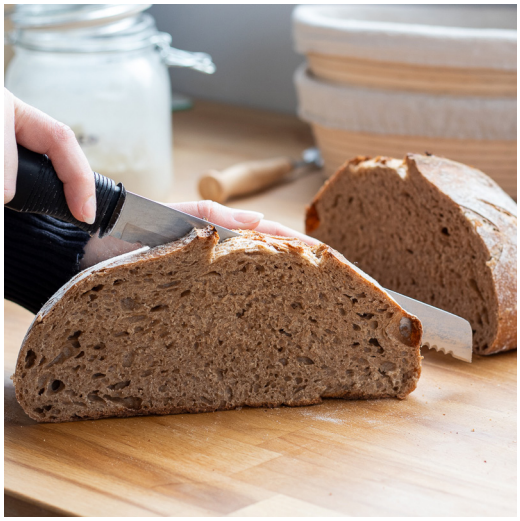
If using a thermometer, the internal temperature should be at least 97°C/208°F.

Allow the bread to cool completely before cutting. As tempting as warm fresh bread is, it will continue to cook as it cools and cutting too soon can result in gummy bread.

SAMPLE BAKING SCHEDULE

Starting out, wrapping your head around the timing of sourdough can be tough. It only requires a few minutes of hands on work at a time, but it's spread over several days. Your starter can be used about 4 hours after feeding, but it develops more flavour after 8-12 hours.

Sourdough timings aren't rigid, think of them as general guidelines. Fermentation times can vary pretty widely based on temperature, the strength of your starter, the time of year, etc. Make sure you keep an eye on the physical signs of good fermentation rather than sticking to a schedule. The more you bake, the more you will develop a sense for timing.



Day 1

8:00am - feed sourdough starter
6:00pm - mix dough
6:30pm - first stretch & fold
7:00pm - second stretch & fold
7:30pm - third stretch & fold
8:00pm - do a windowpane test and another stretch & fold if needed
10:00pm - preshape
10:20pm - final shape & into the fridge

Day 2

9:00am - take dough out of the fridge & preheat oven
10:00am - score & bake

HAVING TROUBLE?

As always, we're here to help! Feel free to contact us for troubleshooting or advice, but please give us as much information as you can. We recommend keeping a sourdough journal with times, temps etc. It's a great way to learn what works for you and it's helpful information to share if you need help troubleshooting.