



Bread Baking Boot Camp

How to bake artisan bread at home

Philosophy

The first loaf of bread you ever make at home will be better than anything you can buy at the store, and it only gets better from there. The trick is using recipes and techniques that fit into a busy schedule so that you can have fresh, homemade, artisan bread every day of the week. Typical bread recipes usually require three to four hour blocks of time for a complex sequence of mixing, kneading, proofing, and shaping. In contrast, the recipes you use in this class require 10 minutes to mix, 10 minutes to shape, and 25 minutes to bake, and can be scheduled around all of your other activities.

Here is a typical baking schedule for me:

- Day 1 - 5:00 - 5:10 PM: Mix ingredients. Proof for 18 hours.
- Day 2 - 8:00 - 8:10 AM: Shape loaves. Proof for 2 hours.
- Day 2 - 10:00 - 10:30 AM: Bake loaves.

Or, if I am planning on being out most of the day, I can start the fermentation first thing in the morning and have it shaped and proofed in time for a leisurely dinner. These times are incredibly flexible. Because this is a low yeast recipe, you could proof the dough for as little as 12 hours or as many as 20. If you left the shaped dough for 4 hours instead of 2, no problem!

Tools

The tools you require are limited, and you can improvise if you don't have a certain item.

Required:

- Mixing bowl
- Basket or bowl for proofing shaped dough
- Towel
- Bread pan (for water to generate steam)
- Scoring knife or *lame*

Nice to have:

- Baker's scale
- Bench scrapper
- Bread peel
- Baking stone
- Instant read thermometer
- Standing mixer
- Whole grain wheat grinder



Some tools of the trade: A mixing bowl, basket, bread cloth, lame, and scale.

Ingredients

Traditionally, bread contains four - and only four - ingredients: wheat flour, salt, yeast, and water. If you wanted to get technical, you could say only three ingredients, since the yeast is naturally occurring in the flour, but in this basic course we will use a small amount of commercially available yeast.

You can add just about anything else you can think of to bread: nuts and seeds, olives or raisins, different types of flours, honey, sugar, or eggs. But from the perspective of the basic artisan loaf, none of these creations would be, strictly speaking, bread.

There is a wondrous variety of breads you can make to by simply varying the proportions of the basic ingredients. A stiff dough with less water could be used to make flat bread, pizza crust, or pitas. A very wet dough is used to make ethereal ciabatta. The loaf we will make today is relatively dry for easy handling, though you can play with the proportion of flour to water and see what happens!



Basic ingredients for bread making, clockwise from upper right: water, yeast, salt, and flour.

Today's Schedule

Time	Topic
1:00	Introduction
	Shaping loaves
	Bakers math
	Tools and techniques

Baker's Math

Weighing your ingredients makes recipes flexible and easy to scale. Baker's use a form a proportional math known as Baker's Math. It works like this:

- The flour is always 100%.
- All other ingredients are listed as percentages relative to the total weight of flour.

For example, a recipe might read:

Basic Loaf	Scaled Values	Weights for 800 g of flour	Weights for 1.8 lbs flour
Flour	100%	800	1.8
Water	75%	600	1.3
Yeast	0.5%	4	0.16 oz
Salt	2%	16	0.64 oz
Total	178%	1420	3

This will result in three loaves, each weighing about 460 g or about 1 pound.

Let's say you wanted to make 5 loaves instead? How much flour is that? Since five loaves is about 5 lbs of dough, you divide 5 by your total percentage:

$$\frac{5 \text{ lbs}}{1.78} = 2.8 \text{ lbs}$$

or about 1270 grams. Using this, you can scale the weights of the other ingredients accordingly.

Basic Loaf	Scaled Values	Weights for 1270 g flour	Weights for 2.8 lbs flour
Flour	100%	1270	2.8
Water	75%	953	2.1
Yeast	0.5%	6	0.22 oz
Salt	2%	25	0.9 oz
Total	178%	2254	5

Because metric units are so much more convenient for scaling, we will be using them in this course. However, a conversion table is located in the appendix.

Techniques

Mixing

We mix dough to ensure the ingredients are well combined and we knead dough to develop gluten. Gluten is comprised gliadin and glutenin, two water insoluble proteins. When we mechanically manipulate the dough, these proteins stretch and combine to form structural networks that act to trap gases released by the yeasts during fermentation. Most recipes for baking bread call for kneading bread for 10 to 20 minutes, either by hand or in a standing mixer, to develop this gluten network.

However, application of water and time achieves the same effect. In our recipe, we mix the ingredients to make sure the flour, yeast, salt, and water are evenly combined, and let that dough sit for 12 to 18 hours. To make sure our dough doesn't rise too much, we use a relatively small amount of yeast. This means the rise time is extremely flexible.



Shaping

Once the gluten in our mixture has developed, it's time to shape the loaves. We shape the dough to create a tight outer membrane that will improve the appearance of the final loaf. In all honesty, you could throw what you've got right into the oven and it would wind up tasting great, but with shaping you'll improve the crust of the final product.

Divide your dough to make loaves the size you'd like and let them rest for a few minutes. While you wait, line your proofing baskets or bowls with bread towels liberally dusted with flour. To make simple rounds, place a piece of dough on a floured surface and fold the edges toward the center making a rough ball. Placing the bottom part of the ball under your palm, gently roll the ball to make a round, tight ball. Place the ball upside down in your prepared proofing baskets, dust with a bit more flour, and flip the edges of the towel over to cover.

While this takes a bit of practice to get consistent results, no matter what your bread looks like, it is going to taste great. If necessary, just use the adjective "rustic" when describing your first few delectable if misshapen attempts!

Proofing

Proofing refers to the final rise before baking. Because we are using a low yeast recipe, the proofing times are flexible. You need to wait long enough to give the yeast time to recover the dough from the damage we did during shaping. The proofing period also allows additional fermentation and improves flavor.



The only risk we run in over-proofing is creating large air pockets that can detract from the crumb or mouthfeel of the loaf. Again, rustic!

After a couple of hours, check your dough. If you poke your finger into the dough it should leave an imprint in the dough without springing back.

Scoring

Invert your proofed rounds from the basket onto a bread peel or baking sheet sprinkled with corn meal or flour. Using your scoring knife or lame, quickly cut three or four slashes in the top of the loaf (it sometimes helps to dip your knife in flour to prevent sticking). There is no defined pattern here, the goal is to make cuts in the surface that will allow the bread to expand while baking, so you can do four vertical slashes, a box, a cross, or whatever other pattern you like.



Baking

At this point, you can place your loaf in a 500 degree oven and bake for 25 minutes, but there are a few things we can do to improve the overall outcome.

The best environment for baking bread is a very hot, moist oven with uniform heat. Most home ovens can vary in temperature by as much as 50 degrees and are ventilated so it can be difficult to sustain a high moisture environment. We can get around that with two additional items: a bread pan filled with water inside the oven to provide a continuous source of steam, and a baking stone to act as a thermal mass to help stabilize the oven temperature. You can use unglazed paving stones instead of a baking stone, but if you like to use your oven for something other than making bread, it is nice to be able to take the baking stone out from time to time.



Once you have these in place, you can bake the bread directly on the stone. These two small modifications will take the crust of your bread to a new level. When the bread has achieved the desired nut-brown color, remove from the oven and place on a cooling rack. Take a moment to place your ear close to the hot loaves and listen to the crust crackle as it cools. That's how you know you've got it right!

Eating

You will be tempted to cut into your loaf as soon as it comes out of the oven. *Resist this temptation!* The bread, like a roast, needs to rest as it finishes cooking. Let the bread cool until it comes to room temperature. Slice and enjoy.

Storing

Unlike store bought bread, your bread will only last 24 - 48 hours before becoming hard and stale. It is best if you can slice it after it cools and store the sliced bread in a plastic bag in the freezer. Properly stored, your bread can last for weeks. But it won't, because you'll eat it all!

Recipe

Basic Loaf

	Scaled Values	Weights for 900 g flour	Weights for 2 lbs flour
AP Flour	100%	600	1.3
Whole Wheat Flour	33%	200	0.4
Water	100%	600	1.3
Yeast	0.6%	4	0.19 oz
Salt	2.7%	16	0.83 oz
Total	237%	1420	3

1. Mix ingredients in a large bowl and cover with a damp cloth.
2. Proof in a cool place for 12 - 18 hours.
3. Divide dough into thirds and let rest for a few minutes.
4. Prepare three baskets or bowls by placing a towel in each bowl and dust liberally with flour.
5. Shape three loaves into rounds and place in prepared baskets, top side down. Flip ends of the towel over the rounds to cover.
6. Proof for 2 - 4 hours.
7. About 30 minutes prior to baking, preheat oven to highest setting (usually 500 degrees, but higher is better). Place a bread pan filled with water in the oven to generate steam.
8. Invert loaves from baskets onto bread peel, score the tops with the lame, and place in the oven.
9. Bake for 25 minutes (shorter if your oven is hotter). The bread is done with the crust turns a deep nut brown.

Variations

This recipe works well with 100% all purpose flour, or varying proportions of whole wheat to white flour. I have gone as high as 300 g of whole wheat to 500 g of white flour with out losing a soft crumb. However, if you increase the amount of whole wheat, increase the amount of water as well as your initial fermentation time, since it takes longer for the gluten to develop.

You can also add various flavorings to the bread, like chunks of olives, parmesan cheese, or seeds.

This recipe is adapted from Jim Lahey's book *My Bread*.

Appendix

Volumes and weights of common ingredients

Ingredient	Metric, g or ml	Standard, oz, dry or fluid
1 cup of flour	140	5
1 teaspoon salt	6	0.25
1 teaspoon yeast	4	0.14
1 cup water	236	8
1 tablespoon oil	14	0.50
1 tablespoon honey	21	0.75

Common conversions

Metric	Standard
1 gram	0.035 oz
1 kilogram	2.2 lbs
1 ml	0.035 fl. oz