Published on *The Fresh Loaf* (http://www.thefreshloaf.com)

By *Floydm*
Created *Nov 23 2008 - 4:18pm*

The Fresh Loaf Baker's Handbook

The Fresh Loaf Handbook will be a distillation of the baking wisdom of The Fresh Loaf community.

Work on it began in early January 2009. It is very much a work in progress and currently there are major gaps in it, but over time we hope it will become a very helpful resource.

The original announcement of the Handbook project is here [1]. A forum dedicated to discussion of the Handbook project is here [2].

Section I: Introduction

There are few things that smell quite as good as a loaf of bread baking in the oven. But there are other benefits beyond just that lovely smell of baking your own bread. It's cheaper, tastier, and, more often than not, healthier than buying it from the store.

Our goal with this e-book is to help amateur bakers produce the kind of bread that they would most like to pull from their ovens. We hope that it helps you.

Section II: Bread Basics

You can jump right in and start baking without knowing much about the ingredients or how the process works, but if you'll take the time to learn a little bit about the baking process you'll find baking to be much more rewarding. You'll also be equipped to modify recipes to fit your taste if you first understand how those modifications will change the results.

Baker's Math

Let's have a quick math lesson.

Math?! Yes! Professional bakers don't usually talk about recipes, but rather about formulas. Bread is all about proportions, and baker's math is a way of breaking down ingredients into these proportions so that

you can scale up or down as needed. It also makes baking much easier because, once you understand the basic proportions, you can freely mix and match ingredients to invent all kinds of breads on your own.

It's not necessary to learn baker's math to bake good bread, of course, but it can expand your ability to mix and match ingredients and break free of recipes to create your own formulas.

In baker's math, every ingredient is expressed in terms of the flour weight, which is always expressed as 100 percent. For example, let's take a typical formula for French bread:

* Flour: 100%
* Water: 66%
* Salt: 2%
* Instant yeast: 0.6%
* Total: 170%

So, let’s say we’ve got 500 grams of flour. If I wanted to make French bread, here’s how I’d figure out the weight of the other ingredients

- Water: 500 * 0.66 = 330 grams
- Salt: 500 * .02 = 10 grams
- Instant yeast: 500 *.006 = 3 grams

We can also first decide how much dough we want, and work backwards. Let's say we want to make 1 kilogram of dough. First, we need to figure out how much flour we need. To do this, we divide the total of all the ingredient percentages added up (170% = 1.7) into the total weight of the dough:
1000 grams / 1.7 = 588 grams of flour (rounded to nearest gram).

Now that we know the flour weight, we figure out the weight of each of the ingredients by multiplying their percentage by the flour weight, just as we did above.

* Water = 0.66 * 588 = 388 grams
* Salt = .02 * 588 = 12 grams (rounded)
* Instant yeast = .006 * 588 = 6 grams (rounded)

Ingredients

At its core, bread is made of four ingredients: flour, water, salt and some sort of leavening. It’s possible to make bread without salt, though saltless bread, to most palates, tastes a lot like cardboard. There are even those who eliminate leavening, though at this point, the loaf doesn't really taste like what most of us would expect from a loaf of bread.

One can add all sorts of other ingredients, of course, from sweeteners, to nuts, fruits and fats – but the essence of any bread comes down to these basic four.

The Basic Four

In this section, we'll go over the basic four ingredients: flour, water, salt and leavening.

Flour

Wheat flour comes in many different forms. First, let's talk a bit about the wheat from which it originates.

The wheat berry has three basic parts: the endosperm, the germ and the bran. The germ is the embryonic plant, but is only about 2-3% of the total berry. The endosperm, which is about 75% of the berry, serves as food for the germ as it sprouts. The rest is the bran, which protects the tiny germ.

White flour is almost pure endosperm, whereas whole-wheat flour retains all three parts. As a result, white flour will keep for a long time at room temperature – probably a year or more. Whole-wheat flour, on the other hand, contains the oily germ, and that oil goes rancid at room temperature in just a couple of months. This is why so many people think that whole wheat bread tastes bitter; mostly likely, the bread they ate was made from rancid flour.

All Purpose Flour

All-purpose or artisan flour: For most artisan white breads, bakers generally prefer all-purpose (AP) or so-called artisan flour. These flours typically have a protein percentage of 10.5% to 11.5% or so. King Arthur Flour's regular AP flour is about 11.7%, so it's on the very high end, while General Mill's AP flours are about 10.5%. Most Southern brands of AP flours like White Lily are not good for making bread, because they have a low protein percentage and are also bleached, but are better suited to cakes and biscuits.

Bleached flour will produce bread if it has a high enough protein percentage, but it will not have the same golden color or rich flavor of unbleached flour.

King Arthur Flour's Organic Artisan Flour and Giusto's Baker's Choice are favorites among amateur artisan bakers. They're about 11.3% protein and perform beautifully, striking a nice balance between rise and flavor. However, these preferences aside, one can bake very good bread from basically any unbleached all-purpose flour one can buy at the grocery store.

Bread Flour

Bread flour: White bread flour is typically between 11.5% and 12.5% protein. Some brands, such as King Arthur Flour, are very strong with close to 13% protein, whereas others are closer to All-Purpose flour. Bread flour is good to use when making bread with a high percentage of rye flour or a lot of goodies like nuts, seeds, cooked grains or dried fruits. It produces a spectacular rise, but without additions, some bakers find that bread made from this flour is a bit tough and somewhat lacking in flavor compared to all-purpose flour.

Whole Wheat Flour

Whole wheat bread flour: Not all whole wheat flours are the same. The bran in whole-wheat flour punctures the gluten web which traps gas, so it won't rise quite as high as most white flours. As a result, you want to find a whole-wheat flour with as high a protein percentage as possible. The bran also contains protein, so look for a flour with at least 14% protein. You'll also want to make sure that it's fresh

becausewhole wheat flour goes rancid after just a couple of months at room temperature because it retains the oily germ. King Arthur Flour and Giusto's are both high-quality brands.

You'll want to store whole-wheat flours in the freezer so that they'll keep longer.

White whole wheat bread flour: Traditionally, whole wheat bread flour is made from hard red winter wheat or hard red spring wheat. However, in recent years, a variety of hard white wheat flour has come on the market that is strong enough to make bread. It lacks the tannins that give the red wheat its color and, for some people, a bitter flavor. Some folks really like it, finding that it mimics the taste of white flour and is less bitter than traditional whole wheat flour; others find it has a waxy texture that's unappealing. But white whole wheat flour is certainly worth trying to see what you think.

Whole wheat pastry flour: Perfect for all quick breads, this flour is made almost exclusively from soft white winter wheat, and has a low percentage of protein. So long as you increase the liquid in the recipe a bit, you can substitute it for white flour in nearly all quick breads, and hardly anyone will be able to tell the difference. Really!

Rye Flour

While wheat flour predominates in the breads of southern Europe and the UK, rye flour plays a more important role in the breads of northern and eastern Europe. This is due to rye's superior ability to grow in the poorer soils and cooler, wetter climates of those regions.

Chemical differences in the proteins and enzymes found in rye present differences in how rye flour behaves when mixed with water to make dough, and these differences impact the use of pre-ferments, mixing, fermentation and baking when there is more rye than wheat flour in the dough.

There are a number of different *types of rye products* available. They vary in how much of the rye berry is included, just as whole wheat differs from white wheat flour. They also differ in how finely ground the rye is.

There are breads made with 100% rye flour, but many other breads are made with lesser percentages. The influence of rye flour on dough handling and on the resulting taste and texture of the bread varies according to the proportion of rye used.

Chemical differences in rye

Gluten is the primary protein found in wheat, and the methods of mixing dough made with wheat flour center on their impact on gluten development and structure. Gluten forms the framework of cells that trap the carbon dioxide generated by fermentation of sugar by yeast. This trapping generates the expansion of the dough (rising) and ultimately the texture of the bread's crumb.

Rye contains much less gluten than wheat, and the gluten rye contains is of poor quality when it comes to trapping air bubbles. Consequently, breads made with mostly rye flour do not expand as much as those made with mostly wheat flour. The crumb of breads in which rye predominates tends to be dense with smaller holes. On the other hand, rye has more free sugars than wheat, so rye dough ferments faster.

Rye contains a group of important complex sugars called "pentosans." These are present in other grains, but rye has more of this substance. Pentosans are important to the baker for several reasons. They compete with the proteins that make gluten for water, and water is the substance that leads the proteins to combine to form

gluten. This means that rye doughs often require a higher proportion of water than doughs in which wheat predominates. Pentosans break apart easily during mixing, and their fragments result in a stickier dough. Because of this, rye doughs require gentler and, usually, briefer mixing than wheat doughs.

Rye is higher in the enzymes (amylases) that break down starch into sugars. Starch is needed to form the structure of the crumb, and if too much starch is split up, the texture of the bread suffers and becomes gummy. Traditionally, this is prevented by acidifying the rye dough, which slows down the action of amylases. This is why breads with a high percentage of rye flour are made with rye sour (rye-based sourdough starter), even if commercial yeast is added.

Acidification of rye dough has other nutritional advantages specific to rye bread which may also be of interest to the home baker, as well as the advantages that also apply to wheat-based sourdoughs.

Rye products used in baking bread

Whole rye berries may be used in bread, after soaking, to contribute flavor and texture. Rye berries are also used after breaking them into smaller pieces in the form of rye chops, cracked rye, rye flakes, and so forth.

The rye flours you may find include the following:

- Pumpernickel flour – Whole grain, coarsely ground rye meal.
- Dark rye flour - "flour milled from the periphery of the grain, similar to the clear flour produced during the miller (sic.) of the wheat. It tends to be coarse and sandy, to absorb quite a lot of water, and in general is difficult to work with." Hamelman, J.. Bread. pp. 48 ff.
- Rye flour – Generally whole grain rye more finely ground than pumpernickel
- Medium rye flour – Some but not all of the germ and bran have been removed from the whole grain.
- Light or White rye flour – Equivalent to all purpose or patent wheat flour. The bran and germ have been mostly, if not entirely, milled out of the rye berry.

In Europe, especially Northern Europe, a much wider range of rye flours is available, encompassing different grinds as well as a variety of percentages of bran and germ.

Rye flour that contains the oily germ (pumpernickel, dark and medium) spoils very quickly, so try to buy the freshest possible and store it in the freezer.

Rye flour used together with wheat flour

A small amount of rye – 5-10% of the total flour by weight – has a definite effect on the flavor of the bread. The distinctive flavor of the rye itself may not be noticed, yet the bread's overall flavor seems better. This may be due to the action of the amylases in rye releasing more sugars. This small addition of rye is what defines a French *pain de campagne*. These breads are often sourdoughs, but the rye may be added with the rest of the flour rather than as a rye sour. There is so little rye in the dough, that it's behavior during mixing and fermentation and its texture when baked may be indistinguishable from a purely wheat bread.

Breads containing up to 40% rye flour are usually called “rye bread.” Jewish Sour Rye (New York Rye, Deli Rye) is a familiar example. The rye flour is in a large enough proportion so that it is advisable to add all or most of it as a rye sour. There is enough rye so that a distinct rye flavor is tasted. However, there is enough wheat flour to provide gluten to form the kind of crumb we associate with wheat breads.

The dough in these breads will feel different during mixing, tending to be stickier. The temptation is to add more flour, but this should be resisted. When hand kneading sticky rye doughs, using rapid, light strokes - minimizing the time your hands are in contact with the dough - decreases the amount of dough that will

stick to your hands. You may also find that wetting your hands with water or lightly oiling them helps.

Breads with over 50% rye flour are another story. All the special considerations due to the chemical differences in rye become more important as the proportion of rye increases. Typically, these breads have a short bulk rise and, once baked, should be allowed to rest for several hours before slicing, so the crumb can set up properly. In the case of breads with 70% rye or more, a rest of 24 hours, even up to a couple of days, may be required.

Other flours

Pastry flour: Pastry flour is perfect for making quick breads like muffins, banana bread, waffles, and pancakes. Its protein percentage is usually about 6% to 8%.

High-gluten flour: This flour is typically only available to commercial bakers or via mail order from places like King Arthur Flour. Its protein level is usually greater than 14%. It's used in bagels (it gives them their tasty chewy texture) and breads with a high percentage of rye.

Fancy durum flour. Also known as **semonlina flour** (though ground finer) or **pasta flour**, durum flour is made from durum wheat. Though high in protein, durum flour does not contain enough gluten to make good bread unless mixed in with regular wheat flour.

00 flour. 00 is an Italian designation for a type of flour commonly used in pizza crust. It is softer (lower in protein) than American bread or all purpose flour.

Spelt flour: Spelt, which is also known as farro, is an ancient grain that is a cousin to wheat. It contains enough gluten to make a light loaf of bread, but absorbs less water than wheat, and so requires a lower hydration. The gluten is also somewhat less resiliant than that of wheat, and, as such, one needs to be careful when using a mixer, as it's easy to over-develop.

Leavening

There are all kinds of ways the leaven breads. Here, we'll be talking about two leavens: commercial yeasts and sourdoughs.

Commercial Yeast

The three most common types of commercial yeast are:

Fresh yeast: Truth be told, fresh yeast, which is also known as cake yeast, is hard for home bakers to find these days. They are sold as little "cakes" that must be kept refrigerated, and they go bad after a few days. Many professional bakeries, however, still use fresh yeast, and so many bread formulas are written with fresh yeast in mind. Typically, breads that rise for 1.5 to 2 hours in bulk and 1 to 1.5 hours shaped call for fresh yeast at 2% of total flour weight.

Many recipes use much, much less yeast than that, however, and they ferment for much longer, which gives

the bread more flavor.

Active dry yeast: This is the kind of yeast that you're most likely to find in your grocery store. Typically, you'll want to use about 1 to 2 tsp per loaf and, if the formula calls for fresh yeast, you'll need to measure out 40% of that weight to convert to active dry.

Active dry yeast needs to be "proofed" before using, which means it needs to be dissolved in about ¼ to ½ cup of lukewarm water (about 90 degrees F or so).

Instant yeast: This is what many amateur bakers prefer to use. In grocery stores you'll often find it labels "Rapid Rise Yeast" or "Bread Machine Yeast." It looks like active dry yeast, but it retains many more living yeasts in each grain. As a result, there's no need to proof it – just add the yeast directly to the dry ingredients. If the formula calls for fresh yeast, measure out 1/3 of that weight for instant yeast. If the recipe calls for active dry yeast, cut the measurement by about 25 percent.

Sourdough

Before the 19th century, sourdough was really the only leavening available (unless you're talking about salt rising bread, which uses bacteria alone – a leavening with which this book does not deal). Sourdough is really not that hard to work with – as some Internet sage once wrote, "People who thought the earth was flat made bread like this for thousands of years."

First, what is this stuff? Sourdough starter is a stable symbiotic culture of wild yeasts and bacteria. The yeasts break down starches into sugars, which the bacteria eat. The bacteria, on the other hand, create an acidic environment that kills off competitors to the yeasts. The yeasts were almost certainly already living on the grains when they were out in the field. As for the bacteria, that's a trickier question, but the consensus seems to be that they come from us – studies have failed to isolate Lactobacillus Sanfranciscensis anywhere except in long-lived sourdough starters and on human teeth. The individual mix of yeasts and bacteria varies from starter to starter, and region to region. It's part of their charm; every starter is unique, and produces bread that tastes somewhat different from those produced with other starters.

Sourdough starters work more slowly than commercial yeasts, which are much more concentrated that starters and have been carefully selected for their gas production. Typically, a sourdough loaf will rise for at least three to four hours in the bowl and will then need another two to three hours as a shaped loaf before it will be ready to bake.

Not all sourdough breads are sour. The French pain au levain and Flemish desem breads are typically not very sour at all, while San Francisco-style sourdoughs and many German ryes are very sour, indeed!

Different starters will produce different levels of sourness, but by far the most important factor in a sourdough bread's flavor is temperature. If the dough is allowed to ferment at 80 to 85 degrees or is allowed to rise slowly overnight in the fridge or in a cool room (35 to 50 degrees F), the bread will have a markedly stronger flavor than a sourdough that rose at room temperature (65 – 70 degrees F).

Sourdough breads generally keep well, because their acid content slows down the staling process. In addition, the acid in sourdough both reduces the impact of bread on one's blood sugar and also neutralizes phytic acid in whole wheat breads. Phytic acid prevents the body from absorbing many nutrients.

Salt

Salt retards the yeast and helps control the fermentation process. It also adds a flavor that most of us expect in even the simplest of breads. Some people claim that they can taste a big difference in their bread depending on the type of salt they use. The famed Poilane bakery in Paris, for example, uses only coarse gray sea salt from Normandy.

Other bakers can't tell a bit of difference. But one aspect in which different salts do objectively differ is their density. For this reason, many bakers weigh their salt because weights are always the same, no matter what kind of salt one uses.

Iif you're measuring by volume, however, you'll want to pay attention to the following:

Table salt or finely ground sea salt: This is the standard for almost all recipes. You can follow the instructions as they are written.

Sea salt: You'll want to increase the volumetric measure by about 50%.

Kosher salt: Double the listed volumetric measure.

Typically, salt is measured at 2 percent of the flour weight, except for rye breads, which are typically at 1.8 percent. The salt proportion may go down a half percent or more if salty ingredients such as olives are incorporated, and may go up 0.3 or 0.5 percent if cooked grains, nuts or seeds are added.

Water

Water activates the yeast and starts the process of developing the proteins that make up gluten into a web that will trap air and create a dough.

Basically, concerning water, if you can drink it, you can bake with it.

That said, some municipalities put an awful lot of chlorine in their water. If you're concerned that the chlorine might interfere with the action of your leavening, the solution is simple: fill a bowl with water and leave it uncovered overnight – the chlorine will dissipate completely.

The percentage of water varies quite a bit depending on the type of bread.

Bagels: Made from a dry dough, water is anywhere from 50% to 60%
Sandwich bread: 60% to 65%
French bread (baguettes, etc): 65% to 70%
Ciabattas: 70% to 80%
Whole grain breads: Whole grains absorb a lot more water than do white flours. For whole-wheat bagels, bakers hydrate the dough at about 60%. For most other breads, they go anywhere from 70% to 85%.

Other Ingredients

Milk, buttermilk, yogurt: When used in place of water, these ingredients soften the crumb and crust, and, especially in the case of buttermilk and yogurt, add flavor to the bread. They will also accentuate the browning of the crust.

Flavored Water: When making onion or garlic flavored breads, one thing that can be done is to flavor the

water used to make the dough. Typically dry onions are added to boiling water to rehydrate the onions then allowed to cool. A small amount is all that is needed, say, 1/4 Cup of onions in 2 cups of hot water. You may add the re hydrated onions to the mix or use it as topping, or not. The water will add a wonderful aroma and flavor to the bread. Dry garlic chips may also be used in this manner. Onion rye, onion bagels benefit from this treatment.

Fats (oils and butter): Fats soften crumb and crust, add flavor and lengthen life of bread. The amount varies widely. Sandwich breads usually have somewhere between 2% to 10% of the flour weight, whereas a brioche could have 80%, even 100% (!!) the flour weight in butter.

Sugar (honey, molasses, sugar, syrup): Sweeteners also add flavor, and, in some cases like honey, can also delay staling. It is a myth that the yeast needs additional sugar in order to work in the dough. In fact, in high quantities, sugar can negatively affect the yeast. Typically sweeteners are 5% to 15% of the flour weight.

Seeds and nuts (sesame, flax, pecans, sunflower, etc.): These are really yummy, and are often toasted before adding them to the dough, usually at the end of the dough's development. Sometimes, the addition of seeds and nuts requires the addition of more salt, bumping the salt percentage up to 2.5% or so.

Dried fruits: These are excellent additions to breads, especially raisins and dried apples. It's a good idea to soak these for a half-hour or even overnight before adding so that those that end up on the surface don't burn. Dried fruits are typically at 15% to 30%.

Spices and herbs: These can add a lot of flavor to breads, but be careful not to overdo it. Dried herbs are best. Traditional additions include dill, rosemary and cinnamon. Typically these are about 2% to 3%.

Note: Tree-bark spices like cinnamon and allspice contain anti-fungal compounds that retard the activity of the yeast. You may want to bump the yeast up by about 50% if you're using these kinds of spices in the dough.

Sourdough Starters

(These instructions have been adapted from a posting at thefreshloaf.com by Sourdolady [3].)

Procedure for Making Sourdough Starter

Day 1: mix...
2 T. whole grain flour (rye and/or wheat)
1 T. unsweetened pineapple juice or orange juice
Cover and let sit at room temperature for 24 hours.

Day 2: add...
2 T. whole grain flour
1 T. juice
Stir well, cover and let sit at room temperature 24 hours. At day 2 you may (or may not) start to see some small bubbles.

Day 3: add...
2 T. whole grain flour
1 T. juice

Stir well, cover and let sit at room temperature 24 hours.

Day 4:
Stir down, measure out 1/4 cup and discard the rest.
To the 1/4 cup add...
1/4 cup flour*
2 Tbs water

*You can feed the starter whatever type of flour you want at this point (unbleached white, whole wheat, rye). If you are new to sourdough, a white starter is probably the best choice. Unbleached all-purpose flour is fine.

Repeat Day 4:
Once daily until the mixture starts to expand and smell yeasty. It is not unusual for the mixture to get very bubbly around Day 3 or 4 and then go completely flat and appear dead. If the mixture does not start to grow again by Day 6, add 1/4 tsp. apple cider vinegar with the daily feeding. This will lower the pH level a bit more and it should kill off competitors to the yeast, allowing them to thrive.

How it Works
The yeast we are trying to cultivate will only become active when the environment is right. When you mix flour and water together, you end up with a mixture that is close to neutral in pH, and our yeasties need it a bit more on the acid side. This is why we are using the acidic fruit juice. There are other microbes in the flour that prefer a more neutral pH, and so they are the first to wake up and grow. Some will produce acids as by-products. That helps to lower the pH to the point that they can no longer grow, until the environment is just right for wild yeast to activate. The length of time it takes for this to happen varies.

When using just flour and water, many nascent starters will grow a gas-producing bacteria that slows down the process. It can raise the starter to three times its volume in a relatively short time. Don't worry--it is harmless. It is a bacterium sometimes used in other food fermentations like cheeses, and it is in the environment, including wheat fields and flours. It does not grow at a low pH, and the fruit juices keep the pH low enough to stop it from growing. Things will still progress, but this is the point at which people get frustrated and quit, because the gassy bacteria stop growing. It will appear that the "yeast" died on you, when in fact, you haven't begun to grow yeast yet. When the pH drops below 3.5--4 or so, the yeast will activate, begin to grow, and the starter will expand again. You just need to keep it fed and cared for until then.

Once your wild yeast is growing, the character and flavor will improve if you continue to give it daily feedings and keep it at room temperature for a couple of weeks longer.

After that time, it should be kept in the refrigerator between uses/feedings. Every week or so, take it out of the fridge, feed it by retaining only ¼ cup of starter and then feed it ¼ cup flour and 2 Tbs water.

Keeping Starter on the Counter

NOTE: This method works well for those who bake sourdough bread muliple times during the week, and who also like making other baked goods with leftover starter. In this chapter, a stiff starter (60 percent hydration) is discussed, but these techniques will work just as well for a wet starter (100% hydration). This personal account was written by JMonkey.

This is how I maintain my own starter, which I created in 2005. I'm a telecommuter who works from home,

and I bake bread for the family two to three times a week. Occasionally, I'll make a loaf with commercial yeast, but typically, I make sourdoughs. Also, on the weekend, I like to make sourdough English muffins and sourdough waffles.

Keeping my starter in the fridge meant I was constantly trying to remember when I needed to take the stuff out to rev it up for bread, and I'd often realize too late that I didn't have enough starter for the muffins or waffles.

After some tinkering, I finally decided to keep the starter on the counter and feed it once or twice a day, which means I've always got at least enough active starter for my overnight whole grain sourdough, and, if I'll need more for a daytime sourdough, I've got enough to seed a bigger amount that can ripen while I sleep. The regimen that I now follow also has the advantage of not wasting anything, because I use all the extra starter stored in the fridge to make all the waffles and English muffins I want. Since both of these recipes derive most of their rise from the interaction of acids and baking soda, using week-old starter from the fridge has enough oomph for leavening and flavor, given that it's gotten pretty acidic already.

Anyway, I'm not saying this is **the** way to maintain a starter - it's just what works for me at this time in my life.

I usually feed it twice a day, once in the morning and once again before bed. Sometimes I forget, though, and only feed it once a day, but it doesn't seem to mind much. I keep it at 60% hydration, which is pretty stiff, but I find it's less messy and stands up a bit better that the wet stuff would to a missed feeding here and there, due to my forgetful nature. Here's how I feed it (it's a 1-3-5 ratio for starter-water-flour by weight).

In the morning, it hasn't risen much, but it feels puffy, and when I break it open, it's clearly aerated inside. Sometimes, it actually blows the lid off the plastic container.

It weighs about 45 grams, so I take 5 grams of it (about the size of a small marble) and put the rest in my fridge bowl. These leftovers will find their way into waffles or English muffins later in the week.

Then I add 15 grams (1 Tbs) of water and mush it up until it's soft and the water has turned somewhat milky in color.

Then I add 25 grams (2 heaping Tbs or 2 Tbs + 1 tsp) of whole wheat flour.

(If you're maintaining a wet starter, simply increase the water to 25 grams)

Finally, I mix it all up with a spoon, take it out and knead it a bit in my hands, which consists of folding it over on itself four or five times. I then roll it into a ball, snap on the lid and let it work.

That's it. I've found it's not that much of a hassle to feed it twice a day and is much less annoying than realizing I can't make a sourdough because I forgot to take my starter out of the fridge and feed it.

Maintaining Sourdough Starter in the Refrigerator

If you only bake once every week or two, you'll be happier storing your starter in the fridge in a covered container.

Once a week, take it out, and feed it

Once a week, take it out, and feed it.
For a wet starter, retain only 1/4 cup of starter and then feed it 1/2 cup flour and 4 Tbs water.

For a stiff starter, retain a marble-sized piece and add 15 grams (1 Tbs) of water. Mush it up until it's soft and the water has turned somewhat milky in color. Then add 25 grams (2 heaping Tbs or 1 Tbs + 1 tsp) of flour.

Keep it out for an hour or four, and then pop it back into the fridge.

If you're going to bake with it, make sure to take it out a day before and feed it twice, with at least 8 hours in between each feeding.

Pre-Ferments

To add more flavor to breads, many bakers use pre-ferments, in which a portion of the bread flour is mixed with water, occasionally salt, and a tiny bit of yeast, and is then allowed to ferment for a long time – 12-18 hours, usually. There are three basic types of pre-ferments, and they usually account for anywhere from 15% to 40% of the dough:

Poolish: Most famously used to make tasty baguettes, a poolish consists of equal weights of flour and water (or 2 parts flour to 1 part water by volume) with just a tiny bit of yeast. For home bakers, a pinch or 1/16 of a tsp should be more than enough.

A poolish is ready when it is very bubbly, smells sweet and has just begun to recede from hits high point.

Biga: Truth be told, "biga" is just an Italian word for pre-ferment, but in the English speaking world, it has come to mean a stiff preferment, usually a dough at about 60% hydration with just a pinch of yeast. It should be kneaded for a few minutes after it is mixed up.

A biga is ready when it has begun to recede just slightly in the center.

Pate Fermente: Literally, this is French for "old dough," and it's just what it sounds like. In France, they'll often save dough from the previous day's batch, keep it in the fridge, and then used it in the next day's batch. Typically, though, home bakers make one by exactly mimicking the proportions of flour, water and salt, and adding just a tiny pinch of yeast. It is then allowed to ferment for a long period of time.

Alternatively, once could even use the same proportions of yeast, but only let it ferment for an hour or so on the counter, and then placing it in the refrigerator.

Like a biga, a pate fermente is ready when it just begins to recede in the center.

Process & Technique

Ingredients matter, but nearly as important as the ingredients you put into a loaf of bread are the techniques you use. Appropriate mixing, folding, and shaping results in a beautiful loaf with an uneven crumb and a crispy crust. Poor mixing and shaping can lead to a loaf that more closely resembles a brick than something you want to eat.

Mixing and Dough Development

This is the part of baking that is intimidating to many new bakers, and it doesn't need to be. Please take a few minutes to read this section and begin to learn what the dough should feel like and how to get it feeling like it is well developed. Many of us started baking by using a bread machine or a Kitchen Aid stand mixer to mix and knead the dough. While this works reasonably well, and other methods are described below, you will learn more quickly how the dough should feel in the different stages of development if you use the tools god gives us, our hands. For thousands of years humans have made good bread using only a crude bowl and their hands as tools. While commercial bakeries don't have the time to hand mix and shape thousands of loaves daily, much of what is wrong with commercial bread starts here in the first phase of bread making.

Mixing: Start by gathering all of the needed ingredients for the recipe. If you are making a basic French style bread that uses just the basic four ingredients (flour, water, salt and yeast), measure or better, weigh each item carefully ahead of time and have it in front of you ready to use. This might seem like over simplifying this procedure but I can tell you from experience you will forget the salt or pour all the water in without having measured it or can't remember some additional ingredient, if you don't get organized, first.

In a large bowl, add all of the dry ingredients first and stir or mix them together well. This means that Instant Dry Yeast and salt are added to the flour and any other dry ingredients you may be using with your recipe. NOTE: If you are using Active Dry Yeast, the directions for re activating this type of yeast call for adding the yeast to a cup or so of the water (warmed) needed for the recipe 5 or 10 minutes ahead of mixing the dough. If you are using Cake Yeast, crumble it with and into the flour using your fingers.
Continuing; Next, add all of the water and begin combining the flour into the water. You can use your fingers, (yes it will be a mess but it is supposed to be) or a spoon to accomplish this first mixing. Wood, Stainless Steel, Plastic, any kind of spoon or bowl will do fine. When the mixture is mostly a shaggy mass and looks like most of the dry flour is combined into the mass, you can stop, clean your hands over the bowl and cover the bowl with a plastic bag or a damp towel or plastic wrap. Plastic grocery bags are my favorite. Wait at least 15 minutes and as long as an hour for the flour to absorb the water. When you come back to the mix, it won't feel anything like it did after first mixing. Scrape everything you can onto a clean counter and quickly clean and dry the mixing bowl.

Kneading or Developing: This is the fun part of bread making. You are starting with a mixture of flour, water, salt and yeast. At the moment it is just those things put together in a bowl. We need to develop these things into something more, a smooth dough. The best way to show you or tell you how to accomplish this is with a video. There are many video clips that show similar techniques but this one I like the best. Richard Bertinet has produced an excellent video [4] with Gourmet Magazine that shows the mixing technique above, and the slap and fold kneading technique that many of us now use in some form or another. I urge you to watch this video and learn to do this maneuver with the dough. As you will see in the video, the dough gradually comes together and becomes smooth and flexible. Bertinet is making a sweet dough with eggs and sugar but the method works on any kind of dough or bread type. Finish by rounding and putting tension on the outer skin of the dough and forming a ball.

Once the dough is well developed, smooth and rounded, lightly oil the now clean mixing bowl with a few drops of oil on your fingers (or lightly spray regular cooking oil into the bowl) and place the dough into the bowl, seams down and roll the ball around to coat all the surfaces. Cover the bowl as before during what is called the Primary Ferment. During the primary ferment, the dough will expand in volume as the yeast begins to eat the sugars in the flour and create Carbon Dioxide. Your well developed dough will trap those

CO2 bubbles and form pockets that will become the air pockets in the bread, making it lighter.

NOTE: For Whole Grain and Multi-Grain breads, It is advisable to not try and develop the dough entirely by kneading. The sharper grains will cut the gluten strands and allow the CO2 gas to escape. A Stretch and Fold will often work as well, done during the primary ferment. A link to this procedure is provided below.

You can always come back to using some appliance to mix and knead your dough. In fact some doughs are somewhat better suited to machine mixing, but not many. You can easily produce wonderful bread in the manner of our ancestors.

Once the dough has doubled in volume you are ready for the next step, Shaping [5]

There are a number of ways to develop dough. The easiest is probably to put it in a KitchenAid-type mixer. About 8 to 10 minutes of mixing the ingredients in a KitchenAid on low speed will generally do the trick.

There's no need to buy a KitchenAid, though, to make good bread. Here are three ways of developing dough by hand.

Traditional Kneading: Use this method when the dough will rise fairly quickly (1-2 hours for the first rise) or if I'm in a hurry to get it developed.

First, mix the ingredients with a spoon until everything is hydrated. Cover and wait about 15 to 20 minutes – this way, you'll let the water do most of your work for you (if you don't have time for this step, feel free to skip it – you may have knead just a little more, though). After this waiting period is done, scrape the dough out of the bowl onto a smooth surface, and push on the down and forward with the heels of your hands. Fold it up back on itself, give the dough a quarter turn, and repeat.

Knead for about 4-5 minutes, and then cover it. Let it rest about 5 minutes, and then knead once again for 1-2 minutes. It should be well developed at this point.

One way to test dough development is to tear off a small chunk and then gently stretch it. If the dough is ready, you should be able to stretch it thin enough so that it becomes translucent. This is called the "windowpane" test.

Stretch and Fold: This method adds about an hour to the rise of an ordinary yeasted loaf, but when you're working with sourdoughs or yeasted breads that have a long rise anyway, it doesn't make that much difference. And it takes hardly active time at all – just a few minutes total. Really!

Mix the ingredients with a spoon until hydrated. Cover and wait 30 minutes to 1 hour. After this rest, scrape the dough out of the bowl and stretch it to about twice its length, if possible. For the first fold, the dough will still be pretty shaggy, so only go as far as you can without ripping. Fold the dough like a letter, give it a quarter turn, and then stretch and fold once again. Place it back in the bowl and cover.

Repeat this folding process twice more with 20-30 minutes in between each one.

More information and a video may be found here: http://www.sourdoughhome.com/stretchandfold.html [6]

Stretching and Folding Illustrated: Here is the Stretch and Fold method illustrated by Mebake (Khalid) [7]. He has artfully depicted the process of keeping the dough in the bowl while developing the gluten and incorporating air into the dough. This easy to do technique is employed by many members here and allows the baker the opportunity to develop the gluten in a bowl during fermentation with little effort and no mess. Once you understand how this works, I'm sure you will use it every time.

French fold: This is a great, quick method for developing dough, but it requires a relatively long rest after everything is hydrated, so it's most appropriate for doughs with a long bulk rise.

Once everything is hydrated, cover and let the dough rest for a least an hour. Remove the dough from the bowl onto a smooth surface. With one hand on either side of the dough and your thumbs underneath, stretch the dough parallel to your body while simultaneously folding it in half along its length with your thumbs.

Give the dough a quarter turn, pick it up, and then throw it down onto the surface, smooth side down. Really, smack it down. Stretch it again while simultaneously folding it over with your thumbs, make another quarter turn, and give it yet another smack with the smooth side down.

Do this about 10 times, and you'll have a well developed dough. If it doesn't seem as developed as you'd like or if it starts to tear, let it rest for 5 minutes, and repeat.

A good video of this technique may be found here:
http://www.gourmet.com/magazine/video/2008/03/bertinet_sweetdough [4]

An alternative method: that keeps the dough in the bowl and all of the kneading is done there.

I use my fingers and scrape the dough into a single lump and flatten it and then fold it in half, turn it a quarter turn and fold again and flatten it. I continue this for about twenty folds. Often it gets very stiff and needs to rest for a few minutes to relax. As noted the dough will let you know when you have done enough. This stretches the original surface a million times the size it was at the start and assures a complete blending of the ingredients. I use this method because it confines the mess and permits making bread in less than ideal places. See the illustration mentioned above for a pictorial that describes this process.

There is no wrong way to knead bread but some ways are much better than others. Some breads benefit from special kneading and handling and some are very hard to get wrong. Before kitchens and mechanical mixers and tables there were dough troughs and all of the mixing and kneading was done there. You could make bread in a dough trough and bake it on a hot flat stone on an open fire.

No knead bread: For bread mixes that use very little leavening and are fairly wet, time provides the development.
Simply mix everything up until hydrated, cover and go to sleep. Anywhere from 12 to 18 hours later, give the dough one stretch and fold, shape as necessary, and then let it rise a couple of hours until it's ready to bake. Learning to use a plastic scraper to handle dough in the mixing bowl, as described below, is a big help.

Alternative video: If you are just a little adventurous, **Check out this excellent video, provided by Mark Sinclair** [8] of The Back Home Bakery. Mark demonstrates folding in the bowl using a plastic scraper over a period of time to develop strength in the dough. This and all of Marks videos are excellent training aids.

Baking

For breads that contain butter and sweeteners, I usually bake them at 350 degrees F for about 55 minutes to an hour for loaves, and 25 to 30 minutes for rolls.

For "lean" breads, which contain only the basic four ingredients, I bake them at 450 degrees F. Baguettes

and rolls bake for about 20 – 25 minutes, while most other loaves bake for 35 to 45 minutes.
An instant read thermometer is a big help in telling when a loaf is done. Stick the thermometer into the bottom of the loaf and push until the tip is in the center of the bread. Breads with butter and sweeteners are done at about 195 degrees F, while lean loaves should be at about 205 degrees F.

For lean breads that are freeform (i.e. not panned), I like to use a baking stone to get better volume and a crisper crust, though you don't need one – a greased cookie sheet will work just fine. If you use a stone, it needs to pre-heat for at least 45 minutes before baking. When you place the dough on the hot stone, it absorbs a lot of heat very quickly, causing it to spring beautifully in the oven.

You can purchase these at most cooking stores or online for anywhere from $30 to $70, depending on the size and thickness. Mine is one-half inch thick and measures 14.5" by 16". It's plenty big enough and works great.

If you're feeling frugal, many people I know prefer to use unglazed quarry tiles, which can sometimes be had from home supply stores for much less than a baking stone. I haven't used them, myself, though.

To get the bread onto the stone, either use a baker's peel or the back of a cookie sheet that has been well dusted with cornmeal or semolina flour. Then, slide the bread off its back and onto the stone with a quick jerk.

Steaming: A crackling, crunchy crust requires more than just a hot oven. It also needs steam, and that's not easy to do in a home oven. But it can be done. Here are a couple of methods:

• The Cast Iron Pan Method: Under the stone, even on the bottom of the oven, if you like, place a cast iron pan and let it heat up along with the stone. Not one you like to use day-to-day, because this process will rip the seasoning right off.

Just before you put the bread in the oven, boil some water. Get a towel and, after you open the oven door, cover the glass of the oven door with the towel. This will prevent water droplets from hitting the hot glass and shattering it (ask me how I know.) You may also want to shield the front of the pan with aluminum foil so that droplets don't jump out of the pan onto the glass and crack it (again, ask me how I know).

Load the bread and dump one cup of boiling water in the pan. WEAR MITTS WHEN YOU DO THIS. Close the oven door, and let it bake. About halfway through the bake, remove the pan so that the bread can finish in a dry oven.

• Covered Cooker Method: In this method, do not use a baking stone. Instead, place a cast-iron Dutch oven (enameled and non-enameled both work fine) or a clay cloche (Sassafras makes a good one – you can find them at Amazon or King Arthur Flour for about $50) in the oven and let it heat up for 45 minutes. Pull out the oven rack, take off the lid, plop your bread into the bottom, score it quickly and replace the top and the rack.

About 15 to 20 minutes before the bake is done, remove the top so that the bread can finish in a dry oven.

The covered cooker captures the steam given off by the dough, and so mimics a wood-fired brick oven. Unfortunately, this method only works for round loaves (though Sassafras also makes a 14 1/2 x 5 1/8 inch clay cooker which works for batards).

Breads should cool for about an hour on a rack (or something else that will allow air to circulate underneath) before slicing.

Storing Bread

Lean crusty loaves can be stored on the counter, cut side down. Really, this works just fine, though you can also store them in a paper bag and cover the cut side with foil -- this will stave off drying out a little longer. Lean yeasted loaves will keep for a day, maybe two, but not much longer. Sourdoughs, on the other hand, will keep for 4-5 days.

Loaves with sweeteners and / or fats should be stored in a plastic bag or an airtight container at room temperature. They'll keep for 3-4 days before they begin to stale.

DON'T store bread in the refrigerator. While this will prevent the bread from going moldy, unfortunately, bread goes stale **very** quickly at temperatures in the 30s and 40s.

Bread freezes very well. Let it cool to room temperature, and then wrap it in foil or place it in a plastic bag. You can either let it thaw out on its own (which takes half a day or so), or wrap it in foil and bake it at 350 degrees for about 45 minutes.

Scoring Bread

Scoring Bread

What is scoring?

"Scoring" is the word used to describe the cuts made in a loaf of bread before it is baked. Some breads are not scored. For example many loaves baked in pans are not. However, almost all free-formed "hearth breads" are scored.

When is scoring done?

Scoring is generally performed just prior to loading the loaves in the oven.

Why are breads scored?

The purpose of scoring is primarily to control the direction in which the bread will expand during "oven spring." Intentionally creating a weak spot on the surface of the loaf prevents the loaf from bursting at weak spots created during shaping.

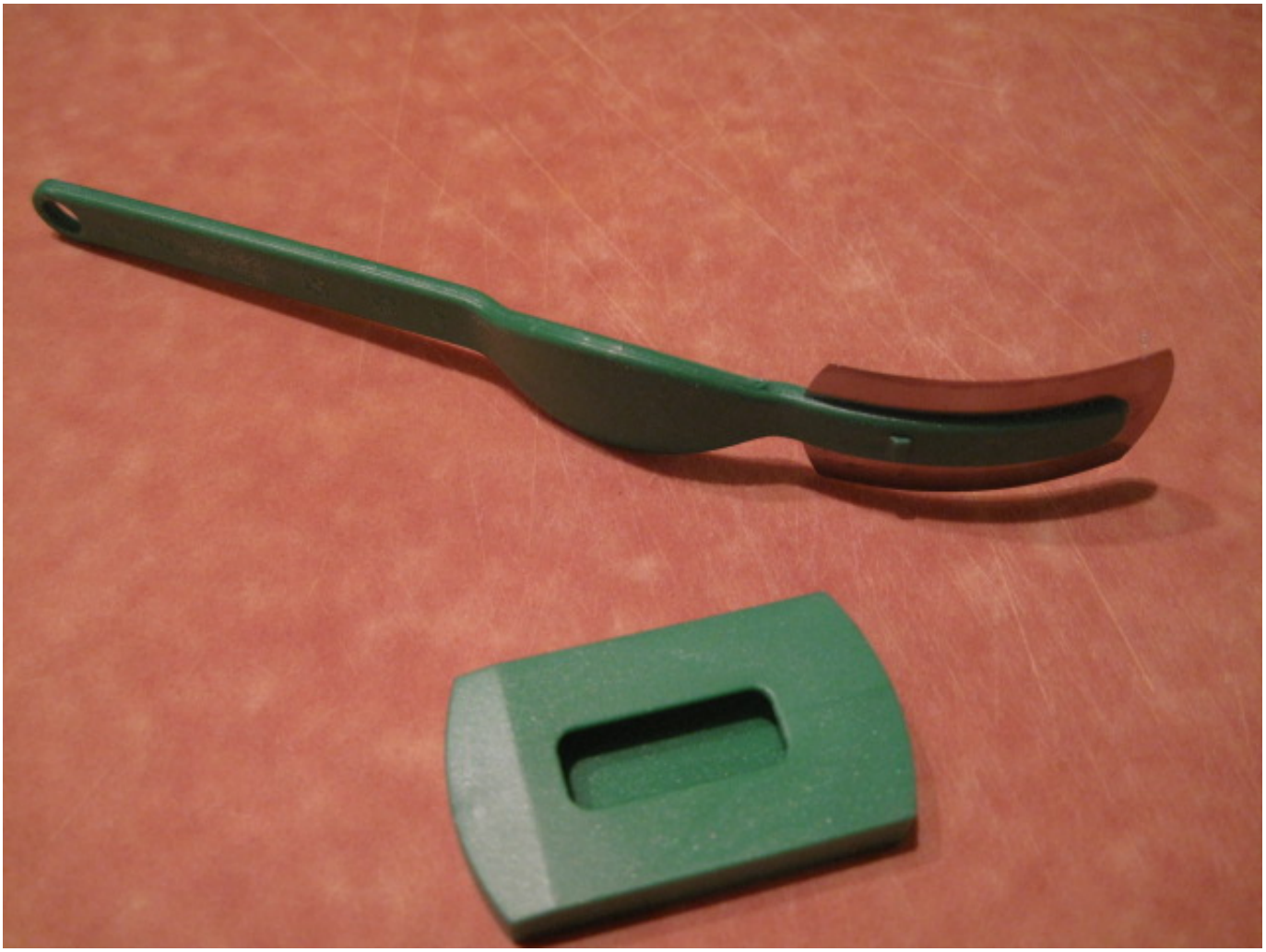
The pattern of cuts made, the angle at which they are made and the depth of the cuts also influence the rate of expansion and the formation of an "ear" - a raised flap of crust at the edge of a cut.

The pattern of cuts also can create a pleasing visual pattern on the surface of the loaf. While there are some very traditional patterns, for example for baguettes, the baker can use the scoring pattern to identify the type of bread or to create an unique pattern that identifies the loaf as coming from his or her oven.

The effects of scoring on loaf shape are discussed in more detail below.

How are breads scored?

Breads are scored with very sharp cutting implements. These may be straight or curved razor blades, which may be held in the hand or mounted on a handle. Scoring may be performed with other sharp, straight blades, even with a straight razor. Some bakers prefer serrated blades. Some examples are pictured below:



This is a "*lame*," the French term for a razor blade used to score bread. This one is permanently mounted on a handle. Others are made with replaceable blades.

This lame holds the blade in a curved position. Others hold the blade straight. The curved lames are generally used for long breads like baguettes which are scored with cuts parallel to the long axis of the loaf. The cuts are made with the blade held at a shallow angle to the surface of the loaf, about 20-30 degrees or so. The blade is held with the concave surface facing up (away from the loaf). A flap of dough is created that will lift up to create an "ear" as the loaf expands and, by lifting gradually, slows the expansion of the loaf. This prolongs the time during which new areas of dough are exposed to the direct heat of the oven and results in greater overall expansion – a larger "bloom."

Serrated knife

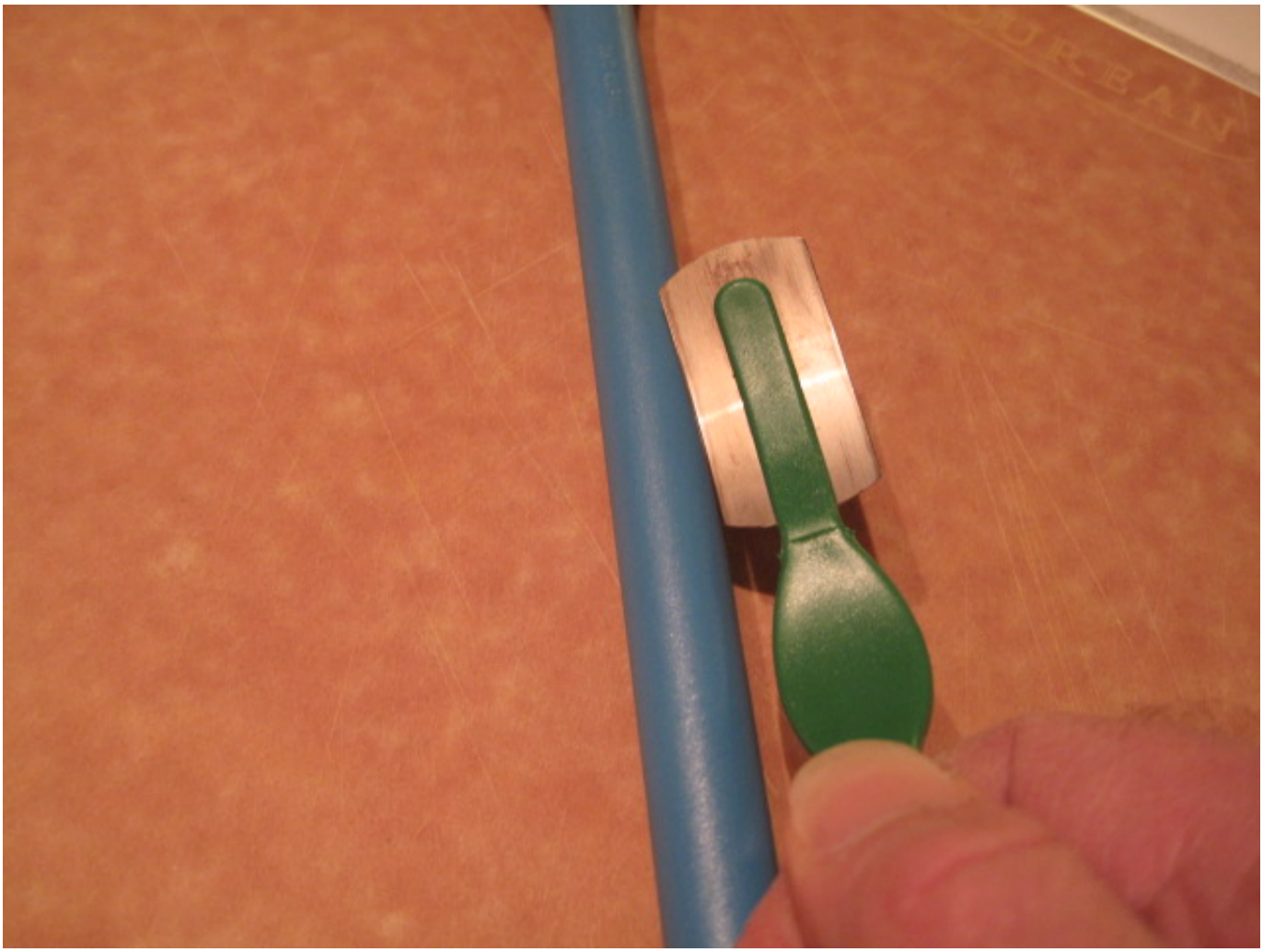
Tomato knife

These are examples of serrated, straight bladed knives. The first one is made expressly for scoring breads. The second one is manufactured as a “tomato knife,” but it is very sharp, holds its edge well and has been found to work very well for scoring bread.

Straight bladed knives are preferred for cuts made with the blade held perpendicular to the loaf's surface. This sort of cut is generally used for round loaves (“boules”). However, they can be used for the same kinds of cuts described above as well.

The angle the blade of the knife makes with the surface of the loaf is important in determining how the cut will open up. If you want the cuts to spread equally from the cut and to open quickly, the knife should be held vertically – at 90 degrees to the surface of the loaf. This type of cut is usually made ¼ to ½ inch deep.

If you want the cuts to spread more slowly and create an “ear,” the knife blade should be held at a shallow angle with the surface of the loaf, like this:



This type of cut should be shallower than the cuts made with the blade vertical to the loaf – about ¼ inch deep. A deeper cut will result in the flap closing from its own weight rather than separating from the surface of the loaf to form an “ear.”

The scoring stroke should be firm, rapid, smooth and decisive. For the beginner, it may help to take “practice swings” or to visualize the movements and totally focus one's attention before making the cuts. Understanding the functions of scoring and the effects of the variables described can help, but there is no substitute for experience. In this respect, scoring bread is no different from an athletic skill or any other art or craft. (Tourist: “Please, sir, can you tell me how to get to Carnegie Hall?” New Yorker: “Practice, practice, practice.”)

The effect of scoring on loaf shape

Michael Suas, in his book "Advanced Bread & Pastry," provides some information about how scoring patterns influence loaf shape. Scoring is not just to make a visually pretty design on the top of a loaf. It is also how the baker controls the direction in which the loaf expands. This impacts the shape of the loaf cross section (rounder or more oval), the height of the loaf and, for a boule, whether it stays round or ends up more oblong.

According to Suas, long loaves like bâtards and baguettes are traditionally scored parallel to their long axis. This may be a single long cut or multiple cuts that are almost parallel and overlap somewhat (for ¼ to 1/3 of

This may be a single long cut or multiple cuts that are almost parallel and overlap somewhat (for 1/4 to 1/3 of their length, generally).

Classic Cut – Single and multiple cuts

However, for breads with high-rye content which have lower gluten and less oven spring, the traditional objective is to encourage a higher rise in the oven spring resulting in a rounder cross section. This is achieved by "sausage" or "chevron" cuts.

Sausage cut (on the left) and Chevron cut (on the right)

Boules are scored in a variety of patterns, again with differing effects on how the loaf expands. The common "tic-tac-toe" pattern and a simple cross will direct the expansion upward. More complex patterns like diamonds result in a relatively flatter loaf.

Boule scored with “tic-tac-toe” pattern

One of most interesting effects is that scoring a boule with multiple parallel cuts encourages expansion at a right angle to the cuts. This results in an oblong loaf shape.

What's the point of an ear? Controlled bloom!

This topic is not about the auricular anatomy of elves (or Vulcans). It's about scoring breads.

Scoring loaves creates a visually pleasing pattern, and it helps control the expansion of the loaf as it bakes.

These San Francisco Sourdough breads illustrate a more "advanced" aspect of scoring that is alluded to by both Hamelman (in "Bread") and Suas (in "Advanced Bread & Pastry.")

San Francisco Sourdough Breads (from Peter Reinhart's "Crust & Crumb")

Detail of bâtard crust, with "ear," grigne" & "bloom."

What Suas called "the classic cut" is parallel to the long axis of a baguette or a bâtard. The cut is made with the blade at a shallow angle to the surface of the loaf. The cut should be shallow - about 1/4 inch deep. Paradoxically, this shallow cut results in the flap lifting better than a deeper cut would, thus forming a nice "ear." Hamelman (pg. 80) points out that "a deep cut will simply collapse from its own weight."

The angle is also important. "If the angle is not achieved and the cut is done with the blade vertical to the loaf, the two sides of the dough will spread very quickly during oven spring and expose an enormous surface area to the heat. The crust will begin to form too soon - sometimes before the end of oven spring - penalizing the development of the bread. If the cut is properly horizontal, the sides of the loaf will spread slower. The layer of dough created by the incision will partially and temporarily protect the surface from the heat and encourage a better oven spring and development." (Suas, pg. 116.)

The second photo, above, illustrates a fairly nice "ear," but it also shows that the bloom occurred slowly, as it should. Notice that the color of the crust in the opening has 3 distinct degrees of browning, decreasing from left to right. The darker part on the left obviously opened first and was exposed to the direct heat of the oven for longer. If the bloom occurred too rapidly, it would have a more even coloration.

This boule was slashed with the blade held at 90 degrees to the surface of the loaf. Note the even coloration of the bloomed crust.

In summary, in order to achieve an optimal bloom in baguettes and bâtards, one must attend to 3 variables when scoring them:

1. The cuts should be almost parallel to the long axis of the loaf.
2. The blade should be held at about a 30 degree angle to the surface of the loaf.
3. The depth of the cut should be shallow - about 1/4 inch.

Variable shading of the bloomed crust confirms that the desired slow but prolonged opening of the cut during oven spring occurred.

A video tutorial can be viewed here:

Happy baking!

David

Shaping

Bread can take just about any shape you desire, from sandwich loaves to mock turkeys. It's hard to learn how to shape loaves from written descriptions, however. So, instead of writing up how to shape loaves, here are links to YouTube videos that do a good job of showing how it's done.

Before you shape the dough, you'll want to pre-shape it first. There are two basic pre-shapes. The first, a basic oval or rectangle, is shown in the sandwich loaf video. The second, a round, is exactly the same as making a round loaf.

Sandwich loaf (Jeff, Aurora and Iris) - http://www.youtube.com/watch?v=Q_3zBaKkxMY

Oval loaf (batard) (Floyd Mann) - http://www.youtube.com/watch?v=Q_3zBaKkxMY

Round loaf (boule) (Fourno Bravo) - http://www.youtube.com/watch?v=I5t-1sJwzFs

Baguette
http://www.youtube.com/watch?v=Idx4QJwcPHA

You'll want a safe place for your shaped loaf to rise. Bannetons are wonderful for round loaves – you can buy these at King Arthur Flour (http://www.kingarthurflour.com). But you can also take a colander or a large bowl and line it with either baker's linen (also at King Arthur Flour) or a linen napkin dusted liberally with either white flour or, even better, white rice flour (NOTHING sticks to this stuff – it's great).

For an oval loaf, simply place the loaf on a dusted linen napkin or baker's linen and bunch up the cloth on both sides. If you like, you can brace it with glasses on either side to keep it in place.

While it rises, make sure it's covered so that the surface doesn't dry out and form a crust.

Section III: Recipes

Buttermilk and Honey Whole-Wheat Sandwich Bread

Buttermilk Honey Whole Wheat Sandwich Bread
JMonkey

This is one of my favorite breads. The honey adds a touch of sweetness while the buttermilk gives it a

slightly tangy flavor. It's great for toast sandwiches. And, as Laurel Robertson (whose recipe I've adapted) in "The Laurel's Kitchen Bread Book" wrote, "It keeps well, when hidden.")

Formula:
Whole wheat flour: 100%
Salt: 2%
Instant yeast: 0.6%
Water: 38%
Buttermilk: 38%
Honey: 8.4%
Unsalted butter: 2.8%

Ingredients
Whole wheat flour : 500 grams or about 4 cups
Salt: 10 grams or 1.25 tsp
Instant yeast: 3 grams or 1 tsp
Water: 185 grams or ¾ cup + 1 Tbs
Buttermilk: 185 grams or ¾ cup + 1 Tbs
Honey: 42 grams or 2 Tbs
Unsalted butter: 14 grams or 1 Tbs

Mixing
Add the salt to the flour. Mix them thoroughly and then add the yeast, also mixing. Melt the butter and mix it with the butter in a separate bowl. Add the water, buttermilk, melted butter and honey to the flour, mixing well until everything is hydrated.

Dough development
You've got several choices on how to develop the dough.

- Traditional kneading: Let it rise 2 to 2.5 hours in the bulk rise at room temperature.
- Stretch and fold: After the final stretch and fold is finished, give it 2 hours at room temperature.
- French fold: Give it two hours after the French fold is finished.

If you're not retarding the bread, deflate the dough after the first rise with a stretch and fold, and let the dough rise once more before shaping. It'll take about 1.5 hours or so.

Shaping
This dough makes a great sandwich loaf, and I usually bake it in a greased 8.5" by 4.5" bread pan.

Retarding
I'll often make the dough after dinner. After the first rise is complete, I'll shape it, put another pan on top and then place it outside if the temperatures will get down into the 45 to 55 degree range. If it'll be colder than that, I place it in our "cold room" which is unheated, but rarely gets below 40 degrees.

If it's going to be a hot summer night, I'll pop it in the fridge, but that usually means that I'll need to let it warm up for 2-3 hours in the morning. I'll sometimes speed up the warming by putting the pan on an upturned bowl at the bottom of a picnic cooler, throw a cup of boiling water in the bottom of the cooler and then close it up quick.

Scoring and baking

I usually score the dough with a single slash down the center, but it's not necessary. I bake at 350 degrees F for about 55 minutes. If you like, you don't even need to preheat the oven. Just pop it in cold and turn the oven on.

San Francisco Style Sourdough

San Francisco Style Sourdough
JMonkey

I don't make white breads very often, but I make this one every so often to satisfy the occasional, overpowering hankering. If you like, you can substitute whole wheat flour for up to half of the white flour, or you can simply use a whole wheat starter. You'll probably want to increase the water, though by 1 to 3 Tbs.

Formula:
White flour: 100%
Salt: 2%
Water: 72%
30% of the flour is in the starter. (I'll give two recipes, one for starter at 100% hydration and another at 60% hydration)

Ingredients
White flour: 500 grams or about 4 cups
Salt: 10 grams or 1.25 tsp
Water:

- Using a wet starter: 210 grams or 1 cup MINUS 1 Tbs
- Using a stiff starter: 270 grams or 1 cup +3 Tbs

Starter: Two options

- Wet starter (100% hydration) 300 grams or 1 ¼ cup
- Stiff starter (60% hydration) 240 grams or 1 cup

Mixing
Dissolve the starter into the water, and then add the salt. Finally add the flour and mix until all is hydrated.

Dough development and the first rise
However you develop the dough, from the time you mix until the time you shape the dough, it'll take about 3 to 4 hours for the first rise at room temperature.

Shaping
Be gentle. You want to retain as many of those air bubbles as possible. Rounds and batards are the traditional shapes for San Francisco-style sourdoughs.

Second rise and retarding
Sourdoughs benefit quite a bit from retarding – many people think loaves that have been retarded taste better. You can simply cover the shaped dough and place it in the fridge or, if you're lucky and the overnight temperature will be between 45 and 55, you can simply place it outside, in which case the bread will probably be ready to bake when you wake up.

If you put it in the fridge, it'll need to warm up for 3-4 hours to complete its rise.

If you don't want to bother with retarding, you can let it rise for another 2 to 3 hours at room temperature. You can also speed things up (and increase sourness) by placing the dough on an upturned bowl in the bottom of a picnic cooler, throwing a cup of boiling water in the bottom and covering it quickly. After an hour, throw another cup of hot water in. The rise should only take a couple of hours this way.

Baking
Score the bread as you like. Hash marks are traditional for rounds, and batards usually take a single, bold stroke down the center or a couple of baguette-style slashes.

While you can certainly bake this bread on a cookie sheet, it benefits from a stone and some steam, or a covered baker. However you do it, bake at 450 degrees for about 35-40 minutes.

Poolish Baguettes

JMonkey

I don't make white breads often, but there's nothing quite like a few homemade baguettes to accompany an elegant meal. This recipe was adapted from "Bread" by Jeffrey Hammelman.

Overall formula:
* White flour: 100%
* Water: 66%
* Salt: 2%
* Instant yeast: 0.36%
* 33% of the flour is pre-fermented as a poolish at 100% hydration with .07% yeast

Poolish:
* White flour: 160 grams or 1.25 cups
* Water: 160 grams or ½ cup + 3 Tbs
* Instant yeast: Just an eeny-weeny pinch (about 1/32 of a tsp)

Final dough:
* All of the poolish
* White flour: 320 grams oz or 2.5 cups
* Water: 160 gram or ½ cup + 3 Tbs
* Salt: 9 grams or 1.25 tsp
* Instant yeast: 1 to 2 grams or 1/2 + 1/8 tsp

The night before: Preferment
The night before, dissolve the yeast into the water for the poolish, and then mix in the flour. Cover and let it ferment at room temperature for 12-16 hours. Once the poolish has bubbles breaking on top and has started to wrinkle, it's ready. It'll also smell really nice - sweet and nutty. Mmmm.

Mixing and dough development
For the final dough, measure out the water and pour it into the poolish to loosen it up. Then pour the entire mixture into a bowl. Mix together the salt, yeast and flour, and then add it to the bowl as well. Mix it all up with a spoon and, once everything is hydrated, knead it the traditional way, until it passes the windowpane test. Cover and let it ferment for two hours, giving it a stretch-and-fold at the one hour mark.

Shaping

If you're making baguettes, divide the dough into three pieces, and preshape into rounds. Cover and let them rest about 20 minutes. Then shape into baguettes about 12 inches longg and cover, letting them rise for about 1 hour to 90 minutes.

Score and bake on a preheated stone in a 460 degree oven with steam for about 25 minutes.

If you want to make a round or a batard, you'll need to bake for about 35 to 40 minutes.

Ciabatta with Poolish

JMonkey

This traditional Italian bread is made from a very wet dough and is barely shaped. As a result, it's full of nice, big holes. Great with olive oil or a good-tasting vinegar, and some pasta. This recipe was adapted from "Bread" by Jeffrey Hammelman.

Formula:

* White flour: 100%
* Water: 73%
* Salt: 2%
* Instant yeast: 0.36%
* 30% of the flour is pre-fermented as a poolish at 100% hydration with .07% yeast

Poolish:

* White flour: 136 grams or about 1 cup
* Water: 136 grams or about ½ cup
* Instant yeast: Just an eeny weeny pinch (about 1/32 of a tsp or 1/10 of a gram)

Final dough:

* All of the poolish
* White flour: 318 grams or two generous cups
* Water: 195 grams or 1.25 cups +1 Tbs
* Salt: 9 grams
* Instant yeast: A heaping 1/8 tsp or .5 grams

The night before: Preferment

The night before, dissolve the yeast into the water for the poolish, and then mix in the flour. Cover and let it ferment at room temperature for 12-16 hours. Once the poolish has bubbles breaking on top and has started to wrinkle, it's ready. It'll also smell ... really nice - sweet and nutty.

Mixing and dough development

For the final dough, measure out the water and pour it into the poolish to loosen it up. Then pour the entire mixture into a bowl. Mix together the salt, yeast and flour, and then add it to the bowl as well. Mix it all up with a spoon and let it sit for one hour. At one hour, give it a stretch and fold, followed by two more every 30 minutes. Then let it ferment for another hour or two, for a total of 3-4 hours bulk fermentation.

Shaping

Remove the dough onto a well-floured surface, and gently pat it out into a rectangle, carefully degassing any truly gigantic bubbles that you notice. That's it. No more shaping required. Let it rest, covered, for

any truly gigantic bubbles that you notice. That's it. No more shaping required. Let it rest, covered, for about 90 minutes.

Baking
Dimple the loaf with wet fingers all the way across and almost all the way through to the bottom of the loaf. Load onto a hot stone at 460 degrees with steam and bake for about 35 to 40 minutes. Let it rest one hour before slicing.

25 percent whole wheat bread

This bread started out as an 8 loaf recipe that I made and sold at church for fund raising for food for the hungry. At 5 dollars a loaf it was quite successful for that year. This makes a goo bread with no preferment but it is soooo much better with a long preferment and and a long rise so less is more where the yeast is concerned

The mix is:

25 % stone ground whole wheat flour

75% all purpose house label unbleached white flour

66% hydration

Yeast content can vary depending on how big a hurry you are in but never more than 2 teaspoons

salt about 1.5 %

On day one:

Make a poolish with8 ounces of stone ground whole wheat flour and 8 ounces of water and as much yeast as will lay on a table knife blade.

On day two:

add 14 ounces of water to the poolish and a teaspoon of dry yeast just to kick things along.

In a large bowl place 24 ounces of flour and a half tablespoon of salt. mix this a little and add the poolish and mix the whole into a shaggy ball. Cover and let rest while you have a cup of coffee.

Knead the dough in the bowl through several turn and fold strokes. Cover and let rest for another cup of coffee. come back and dust the dough with a tight fist full of flour and form a smooth ball. make sure that you scrape the bits and pieces of dough from the bowl and include them in the ball.

Pour a couple of tablespoon of melted bacon fat around the ball and turn the ball of dough over so it is well greased and the bowl is also. Cover and find something else to do for about two hours or more . If the dough is well risen, spread a handful of flour on the table and dump the dough out and put the bowl in the sink to be washed.

Divide the dough into three pieces and form each into a tight round loaf and dust with enough flour that it is not at all sticky. place all three on a well greased baking sheet and allow to rise and rise. just before baking make a slash across each loaf.

Pre-heat the oven to 450 and bake the loaves for about 40 minutes

This freezes well.

40% Rye with Caraway

JMonkey

There is no other bread for a Reuben.
This recipe was adapted from "Bread" by Jeffrey Hammelman.

Formula
Whole rye flour: 40%
White flour: 60%
Water: 75%
Salt: 1.8%
Caraway seeds: 1.8%

40% of the flour (all the rye) is in the starter at 100% hydration

Ingredients
White flour: 300 grams or about 2 generous cups
Rye starter (at 100% hydration): 400 grams or 1.25 cups
Water: 175 grams or ¾ cup
Salt: 9 grams or 1.25 tsp
Caraway seeds: 9 grams or 1 Tbs + 1 tsp

Mixing
Dissolve the starter into the water, and then add the salt and caraway seeds. Add the flour and mix until everything is hydrated.

Dough development and the first rise
You'll want to do either the stretch and fold or traditional kneading. Either way, it'll be a little tricky because the rye will make the dough sticky. Keep at it – the dough will come together, though it will be more clay-like than a 100% wheat dough.

Shaping
Be gentle. You want to retain as many of those air bubbles as possible. Rounds and batards are the traditional shapes.

Second rise
You can let it rise for another 2 hours at room temperature. You can also speed things up (and increase sourness) by placing the dough on an upturned bowl in the bottom of a picnic cooler, throwing a cup of boiling water in the bottom and covering it quickly. After an hour, throw another cup of hot water in. The

rise should only take a 90 minutes this way.

Baking
Score the bread as you like. Hash marks are traditional for rounds, and batards usually take a single, bold stroke down the center or a couple of baguette-style slashes.

While you can certainly bake this bread on a cookie sheet, it benefits from a stone and some steam, or a covered baker. However you do it, bake at 450 degrees for about 40 minutes.

60% Rye with Flaxseeds

JMonkey

A hearty, German-style rye that's loaded with flaxseed
This recipe was adapted from "Bread" by Jeffrey Hammelman.

Formula
Whole rye flour: 60%
White flour: 40%
Flaxseeds: 10%
Water: 80%
Salt: 1.8%

40% of the flour (rye) is in the starter at 100% hydration

Ingredients
White flour: 200 grams or about 1.5 cups
Whole rye flour: 100 grams or 1 scant cup
Rye starter (at 100% hydration): 400 grams or 1.25 cups
Water: 200 grams or ¾ cup + 2 Tbs
Salt: 9 grams or 1.25 tsp
Flaxseeds: 50 grams

Soaker the night before
Mix the flaxseeds and 150 grams (about 1 cup) of the water together. Cover and let sit overnight.

Mixing
Add the remaining water to the flax seed soaker, and then mix with the starter. Separately, mix the the flours and the salt, then mix all ingredients until everything is hydrated.

Dough development and the first rise
You'll want to do either the stretch and fold or traditional kneading, though traditional will probably serve you better. Either way, it'll be a little tricky because the rye – and there's a lot of it in this bread – will make the dough sticky. Keep at it. The dough will come together, though it will be much more clay-like than a 100% wheat dough.

The first rise will take about 3 hours at room temperature.

Shaping
Rounds and batards are the traditional shapes.

Rounds and batards are the traditional shapes.

Second rise
You can let it rise for another 2 hours at room temperature. You can also speed things up (and increase sourness) by placing the dough on an upturned bowl in the bottom of a picnic cooler, throwing a cup of boiling water in the bottom and covering it quickly. After an hour, throw another cup of hot water in. The rise should only take about 90 minutes this way.

Baking
Score the bread as you like. Hash marks are traditional for rounds, and batards usually take a single, bold stroke down the center or a couple of baguette-style slashes.

While you can certainly bake this bread on a cookie sheet, it benefits from a stone and some steam, or a covered baker. However you do it, bake at 450 degrees for about 40 minutes.

Because of its high rye content, this bread should cool for at least 3 hours and up to 24 hours to allow the bread set up. If you cut into it too early, the center will be more liquid or gelatinous than solid.

Overnight Sourdough Pizza Crust (with 60% whole wheat)

JMonkey

This recipe makes four doughballs, each of which will make a pizza that's about 12" in diameter. They freeze well, and will keep for at least a month. To use a frozen doughball, just transfer it to the fridge the night before you want to bake. Then follow the baking instructions as written.

If you wish to make this as a 100% white flour pizza, reduce the water to 510 grams.

Formula

* Whole wheat flour: 60%
* All-purpose white flour: 40%
* Water: 80%
* Olive oil: 5%
* Starter accounts for 2% of the flour at 60% hydration

Ingredients

* Whole wheat flour: 420 grams
* AP flour: 290 grams
* Water: 570 grams

* Water: 370 grams
* Salt: 15 grams

* Olive oil: 36 grams
* Whole wheat starter: 25 grams

The night before, dissolve the starter into the water, and then add the salt and the oil. Finally, mix in the flours, until everything is nicely mixed. Then, let it rest for about an hour, and then do three stretch and folds with about 20-30 minutes between each. Cover the dough, and let it rise all night.

The next morning, see whether the dough has risen enough (8 - 10 hours is usually enough) and then divide it into 4 doughballs of about 340 grams a piece. Two dough balls go into the plastic baggies in the fridge, while the others go in plastic baggies in the freezer.

Remove the fridge doughballs two hours before baking, and shape them into tight balls. Then cover each with a cereal bowl. While they warm up, prepare the toppings.

Tomato sauce (for two pies -- makes more than you'll probably need)

- 1 14 to 16 oz. can crushed tomatoes
- Oregano: 1/2 tsp
- Basil: 1/2 tsp
- Garlic: 2 cloves, diced
- Lemon juice or red wine vinegar: 1 Tbs

Mix this up, and set it aside, adding salt if it needs it. Some canned tomatoes are already well salted. With the brand I use, though, I usually have to add 1/2 tsp or so.

Cheese blend (for two pies)

- Whole fat mozzarella, grated: 4 oz.
- Parmesan, grated: 2 ounces
- Feta, crumbled: 2 oz

Other toppings are, of course, up to you. I like chicken sausage, black olives and mushrooms, myself. Roasted red bell peppers are awesome. Fresh tomatoes are great (under the cheese), when available, as are fresh basil leaves, added just after the pie comes out of the oven.

Shaping the pie
First, an hour before I'm ready to bake, insert a stone and set the oven as high as it will go. When you're finally ready to shape, generously dust a peel with semolina flour or cornmeal. Then, make a small pile of AP flour next to where you'll shape. Coat your hands in flour, take a dough ball, coat it in flour on both sides, and then place it on your knuckles. Bounce the dough on your knuckles in a circle, gently stretching the dough with each bounce. When it's halfway there, place it on the peel, and stretch it all the way out. Mmake sure you stretch the edges apart -- don't stretch across the dough, because the center will be fairly thin and will tear.

Before adding the toppings, make sure that the pie will move on the peel. Then add sauce, cheese and toppings, and bake on the stone for 9-11 minutes. Let it cool for a few minutes on a rack before cutting into slices.

Overnight Whole Grain Sourdough with Wheat, Spelt & Rye

JMonkey

This may be my favorite hearth bread. When made well, it has an open crumb, which is unusual for 100% whole grain breads, and a deliciously sour and nutty flavor.

Overall Formula
Whole wheat flour: 60%
Whole spelt flour: 30%
Whole rye flour: 10%
Water: 75%
Salt: 2%

5% of the flour is in the starter, which could be whole wheat, whole rye or whole spelt, and can be 60% hydration or 100% hydration.

Ingredients
Whole wheat flour: 300 grams or 2 generous cups
Whole spelt flour: 150 grams or 1 generous cup
Whole rye flour: 50 grams or a generous 1/3 cup
Whole grain starter: 40 grams if stiff (a dough ball about the size of a golf ball); 50 grams if wet (about 3-4 Tbs)
Water: 375 grams or 1.5 cups + 1 Tbs
Salt: 10 grams or 1 and 3/8 tsp

Mixing
Dissolve the starter into the water, and then add the salt. Mix the flours together well, and add to the water. Mix until everything is hydrated.

Dough development and the first rise
However you develop the dough, it'll need to rise at room temperature for 8-10 hours. Use the wet finger test to see whether it's fully risen in the morning.

Shaping
Be gentle. You want to retain as many of those air bubbles as possible. Rounds and batards are the traditional shapes.

Second rise
You can let it rise for another 2 to 3 hours at room temperature. You can also speed things up (and increase sourness) by placing the dough on an upturned bowl in the bottom of a picnic cooler, throwing a cup of boiling water in the bottom and covering it quickly. After an hour, throw another cup of hot water in. The rise should only take a couple of hours this way.

Baking
Score the bread as you like. Hash marks are traditional for rounds, and batards usually take a single, bold stroke down the center or a couple of baguette-style slashes.

While you can certainly bake this bread on a cookie sheet, it benefits from a stone and some steam, or a

While you can certainly bake this bread on a cookie sheet, it benefits from a stone and some steam, or a covered baker. However you do it, bake at 450 degrees for about 40 minutes.

Three-Seed Sourdough Bread

JMonkey

*This is a **great** dinner bread – the seeds add a rich nutty flavor to the loaf, which is already full of sourdough flavor. It's a bit too much for most sandwiches, though. This recipe was adapted from "Bread" by Jeffrey Hammelman.*

Overall Formula
White flour: 80%
Whole wheat flour: 20%
Water: 80%
Salt: 2.3% (high, because of all the seeds)
Sunflower seeds, toasted: 12%
Sesame seeds, toasted: 6%
Flaxseeds: 7%
Water: 75%

20% of the flour is in the starter (which should be a whole wheat starter), which is at 60% hydration

Ingredients

Soaker
Flaxseeds: 30 grams or 3 Tbs
Water: 120 grams or ½ cup + 1 Tbs

Final Dough
White flour: 370 grams or about 3 cups
Water: 235 grams or 1 cup + 1 Tbs
Stiff whole wheat starter: 160 grams or about ½ cup
Salt: 11 grams or 1.5 tsp
Sunflower seeds, toasted: 60 grams or 1/3 cup + 2 Tbs
Sesame seeds, toasted: 34 grams or ¼ cup
All of the flaxseed soaker

Making the Soaker
Mix the flaxseeds and the water for the soaker together. Cover and let sit overnight.

Toasting
Spread the sesame and sunflower seeds on a cookie sheet and toast them for 5 to 6 minutes at 380 degrees. Unless you have a high-end toaster oven, I'd recommend avoiding it – some will burn, while others will be raw. Very unpleasant.

Mixing
Dissolve the starter into the water, and then add the salt and the soaker Finally add the flour and seeds. Mix until everything is hydrated.

Dough development and the first rise

However you develop the dough, from the time you mix until the time you shape the dough, it'll take about 4 hours for the first rise at room temperature.

Shaping
Be gentle. You want to retain as many of those air bubbles as possible. Rounds and batards are the traditional shapes.

Second rise and retarding
Sourdoughs benefit quite a bit from retarding – they often taste better. You can simply cover the shaped dough and place it in the fridge or, if you're lucky and the overnight temperature will be between 45 and 55, you can simply place it outside, in which case the bread will probably be ready to bake when you wake up.

If you put it in the fridge, it'll need to warm up for 3-4 hours to complete its rise.

If you don't want to bother with retarding, you can let it rise for another 3 hours at room temperature. You can also speed things up (and increase sourness) by placing the dough on an upturned bowl in the bottom of a picnic cooler, throwing a cup of boiling water in the bottom and covering it quickly. After an hour, throw another cup of hot water in. The rise should only take a couple of hours this way.

Baking
Score the bread as you like. Hash marks are traditional for rounds, and batards usually take a single, bold stroke down the center or a couple of baguette-style slashes.

While you can certainly bake this bread on a cookie sheet, it benefits from a stone and some steam, or a covered baker. However you do it, bake at 450 degrees for about 40 minutes.

Whole Wheat Cinnamon Rolls & Sticky Buns

JMonkey

I make these for breakfast every so often. They're 100% whole wheat, but, really, you'd not know it, especially if you use buttermilk in the dough. That's not to say that they're exactly healthy, but however detrimental they may be to the body, these warm sticky buns are awfully good for the soul on a grey and chilly weekend morning.

Dough Formula
Whole wheat flour: 100%
Milk or buttermilk: 58%
Egg: 12.4%
Honey: 18.8%
Butter, melted: 6.2%
Salt: 2%
Instant yeast: 1.3%

Dough Ingredients

Whole wheat flour: 450 grams; 3-4 cups
Lukewarm buttermilk or milk: 275 grams; 1.25 cups
Egg: 1 large, lightly beaten
Honey: 85 grams or 1/4 cup

Butter, melted: 28 grams or 2 Tbs
Salt: 9 grams or 1.25 tsp

Instant yeast: 6 grams or 2 tsp

Filling ingredients

Brown sugar: 210 grams or 1 cup packed
Egg White: 1 large
Cinnamon: 14 grams or 2 Tbs
Salt: Just a pinch
Currants or raisins: 100 g; or 2/3 cup
Chopped pecans or walnuts: 60 grams or ½ cup

Sticky Bun Topping Ingredients
Brown sugar: 140 grams; 5 ounces; 2/3 cup packed
Cinnamon: 2 to 3 grams; 1 tsp
White flour: 3-4 grams or 1 tsp
Salt: Just a pinch
Melted butter: 56 grams; 2 ounces; 4 Tbs
Corn Syrup, honey or brown rice syrup: 39 grams; 1 3/8 ounces; 2 Tbs
Chopped pecans: 106 grams; 3.75 ounces; 1 cup

Cinnamon Roll Glaze
Powdered sugar: 120 grams or 1 cup
Lemon juice, milk or water: 15-30 grams or 1-2 Tbs

Mixing
If the honey's cold, I like to put the butter and honey in the same bowl and heat it for about 1 minute on medium power in the microwave. But, however you do it, first mix the milk, egg, honey and butter. Mix the flour, salt and yeast in a separate bowl, and then add to the liquids. Mix until everything is hydrated. If you wish, you can knead the traditional way now, or do as I do and use the stretch and fold method starting at 1/2 hour after mixing, and doing two more folds 20 minutes apart.

You may have to adjust the flour or add some water -- the dough should be tacky, but not sticky. In any case, if you've kneaded, the dough will be ready in 60-90 minutes and, if you've done the stretch and fold, it'll be done in about 2 hours.

Filling and Topping
Meanwhile, for the filling, mix everything together until smooth except the dried fruit.

If you're making sticky buns, mix the topping ingredients except for the pecans. Corn syrup will give you a better consistency for the topping because it prevents the sugar from crystallizing, but I don't often have it on hand, and have had good results with both the alternate ingredients.

If you're making cinnamon rolls, you can mix up the glaze now and cover it, or you can wait until the buns are just about to come out of the oven. Start with 1 Tbs of lemon juice, milk or water (I really like the flavor that lemon juice gives to the glaze) and stir it, adding more liquid until you get the consistency you like.

Shaping
Grease a 9x13 inch pan. If you're making sticky buns, spread the topping on the bottom of the pan, placing the pecans on top

the pecans on top.

Then, on a lighlty floured surface, roll out the dough into a rectangle that's roughly 12x16 inches. Spread the filling over the dough, leaving a margin of about an inch or so on the top and bottom edges. Scatter the dried fruit and the nuts over the filling.

Roll the dough into a log and then, using a serrated knife or some dental floss, divide the log in half. Next, cut the two halves in half. Finally, divide each of these sections into three so you end up with 12 buns. Place the buns in the pan.

If you want your buns now, let them rise for about an hour or so until they're just barely touching each other, and then bake. But, if you want to bake them the next morning, simply cover the pan tightly with plastic or aluminum foil, and pop them in the refrigerator or a cold room (if it's in the 40s or 50s, I sometimes just put them outside). The next morning, you may want to let them warm up for about 1 hour before baking, but I find mine are usually ready to go into the oven right away. You'll know they're ready when the buns are touching each other and are about 50% bigger than they when you shaped them.

Baking
Bake at 350 degrees for about 30 minutes. When they are baked, for sticky buns, put foil or parchment paper over the top of the pan, and quickly invert it onto a cooling rack. Scrape any topping left in the pan on top of the buns.

For cinnamon buns, leave the rolls in the pan and drizzle the glaze over them with a fork or a spoon.

They should probably cool for 20-30 minutes before you dig in, but I'll leave that to your discretion.

Whole Wheat Sourdough English Muffins

JMonkey

My daughter basically lives on these for breakfast. I save up old starter over the week in the fridge and make these both during the week and over the weekend. Super easy, and they freeze very well. Simply split and freeze. When you want one, pop it directly in the toaster from the freezer. I learned this recipe with volumetric measures, and never bothered to convert to grams. I adapted this recipe and converted it to whole wheat from a posting at The Fresh Loaf from KJKnits.

Ingredients

Sourdough starter: 1/2 cup (stiff or wet, makes no difference)
Milk: 1 cup if you use wet starter; 1.25 cups if you use stiff
Whole wheat flour: 2 cups
Honey: 1 Tbs
Salt: ¾ tsp
Baking soda: 1 tsp

Semolina flour or cornmeal, for dusting

Dissolve the starter into the milk and then add the flour. Stir to combine, cover with a plate or plastic, and leave out for 8 hours or overnight. It'll be pretty wet – don't worry, it'll firm up by morning.

The next morning, add the honey, salt and baking soda and mix well. Turn onto a lightly floured surface and knead for a few minutes with wet hands. With your fingers, flatten it out to 3/4" thick, and cut with a

and knead for a few minutes with wet hands. With your fingers, flatten it out to 3/4" thick and cut with a biscuit cutter or a drinking glass into rounds. Reflatten the scraps to make additional muffins. You'll get 10-12 muffins. Place muffins on a surface dusted with semolina, cornmeal or flour cover and let them rise for about 45 minutes to an hour.

Spray griddle or skillet lightly with spray oil or add a little butter. (Actually, if it's nonstick, you may not need any grease at all.) Heat to medium high and cook muffins for about 5 minutes on each side, or until browned on the top and bottom and cooked through. These have great griddle spring and rise quite a bit. They're done when the sides are firm.

Split with a fork and toast if you like. As noted above, they freeze very well.

Whole Wheat Sourdough Sandwich Bread

JMonkey

This is another of my favorite breads. Slightly sweet, but also tangy, it's perfect for sandwiches, but also stands well alone, with just a bit of butter.

Formula:
Whole wheat flour: 100%
Salt: 2%
Water or milk: 75%
Honey: 4.2%
Unsalted butter: 2.8%

30% of the flour is in the whole-wheat starter. (I'll give two options, one for starter at 100% hydration and another at 60% hydration)

Ingredients
Whole wheat flour: 500 grams or about 4 cups
Salt: 10 grams or 1.25 tsp
Water:
- Using a wet starter: 225 grams or 1 cup
- Using a stiff starter: 285 grams or 1.25 cups

Whole wheat Starter: Two options
- Wet starter (100% hydration) 300 grams or 1 ¼ cup
- Stiff starter (60% hydration) 240 grams or 1 cup

Honey: 21 grams or 1 Tbs
Unsalted butter: 14 grams or 1 Tbs

Mixing
Dissolve the starter into the water, and then add the salt. Melt the butter and stir in the honey – add both to the water. Finally add the flour and mix until all is hydrated.

Dough development and the first rise
However you develop the dough, from the time you mix until the time you shape the dough, it'll take about 3 to 4 hours for the first rise at room temperature.

Shaping
Shape into a sandwich loaf and place it in a greased 8.5"x 4.5" pan.

Second rise and retarding

Sourdoughs benefit quite a bit from retarding – they often taste better. You can simply cover the shaped dough and place it in the fridge or, if you're lucky and the overnight temperature will be between 45 and 55, you can simply place it outside, in which case the bread will probably be ready to bake when you wake up.

If you put it in the fridge, it'll need to warm up for 3-4 hours to complete its rise.

If you don't want to bother with retarding, you can let it rise for another 3 hours at room temperature. You can also speed things up (and increase sourness) by placing the dough on an upturned bowl in the bottom of a picnic cooler, throwing a cup of boiling water in the bottom and covering it quickly. After an hour, throw another cup of hot water in. The rise should only take a couple of hours this way.

Baking
There's no need to score the bread, but I often do anyway. Bake for about 55 minutes at 350 degrees F. No steam or pre-heating required.

Whole Wheat Sourdough Waffles

JMonkey

I make these just about every Saturday. They're light and delicious, with a light sourdough flavor. They freeze well. Adapted from a recipe in "The King Arthur Flour Baker's Companion"

Ingredients:

Overnight Sponge
Whole wheat pastry flour: 10 ounces or 2 generous cups
Honey: 2 Tbs
Buttermilk: 18 ounces or 2.25 cups
Sourdough starter: 8 ounces (if it's the wet kind, use only 16 ounces or 2 cups buttermilk)

Final Batter
All of the sponge
2 large eggs

2 large eggs
6 Tbs (3/4 stick) unsalted butter, melted
3/4 tsp salt
1 tsp baking soda

Mix up the sponge the night before. Cover it and let it sit. The next morning, it should be bubbly. In another bowl, beat the egg with the melted butter until light, and then mix in the salt and baking soda. Dump this mixture into the sponge -- if the sponge is acidic enough, it should bubble quite a bit when it hits the alkaline baking soda. Mix it all together and then spoon it into a hot waffle iron. You'll know your waffle iron better than mine, but it usually takes about 4-5 minutes. I judge by the volume of steam -- when it starts to dissipate, they're usually done.

This recipe makes 8 to 10 traditional waffles. If you've got a Belgian waffle maker, I'm afraid you'll have to find out for yourself how many it will make, but no matter. The recipe stands well to doubling, even quadrupling, and leftover waffles freeze beautifully, so don't worry about making too many. When you want one for breakfast, just pop it directly into the toaster from the freezer.

Appendix A: Glossary

ABAA: Artisan Baking Across America, by Maggie Glezer. A book featuring profiles of artisan bakers and recipes for some of their breads.

Autolyse: a technique for improving gluten development without heavy kneading. Combine the flour and water from your recipe in a bowl and mix until the flour is fully hydrated. Cover the bowl and let the flour hydrate for 20 minutes, then mix in remaining ingredients. The result is development comparable to a dough that has been kneaded for 5 or 10 minutes with less oxydation (which leads to a yellow crumb).

Baker's percentage:a convention for listing the ingredients in a dough in which the quantity of each ingredient is expressed a percentage of the total amount of flour. Example: 1000g flour, 660g water, 20g salt, 10g yeast is expressed in baker's percentage as 100% flour, 66% water, 2% salt, 1% yeast. Note that this always adds up to more than 100%.

BBA: The Bread Baker's Apprentice, a book by Peter Reinhart. By far the most popular book among amateur artisan bakers in the United States. If you don't have it, buy it.

Banneton: a woven basket, sometimes lined with linen, used to hold a shaped loaf while it is proofing.

Batard: a loaf that has an oval or oblong shape.

Biga: a term used variously as a very stiff (~50% hydration preferment), or as a generic term for preferment.

Boule: a round loaf (French for "ball").

Brotform: a coiled cane basket used to hold a shaped loaf while it is proofing.

Couche: heavy linen fabric used to hold formed loaves for proofing. The fabric can be pleated around the loaves to help them hold their shape.

Crumb: When a baker talks about the crumb they are talking about the pattern of holes inside of a loaf.

Fermentation: (1) the process by which yeast metabolizes sugars to produce carbon dioxide and alcohol (2) (aka bulk fermentation, first fermentation) the period of time the dough rests after mixing and before

(2) (aka bulk fermentation, first fermentation) the period of time the dough rests after mixing and before dividing/shaping.

Folding: one of the best ways of encouraging gluten development in slack doughs. Folding the dough consists of taking a wet dough out of the bowl, spreading it out a little on a clean, well-floured surface, folding it in thirds like a letter, rotating it 90 degrees and folding it up again, picking it up and dusting the loose flour off of it, and then returning the dough to the bowl and covering it again. Like punching down, folding degases the dough some, but it also encourages gluten development.

Gluten: "A tenacious elastic protein of wheat flour that gives cohesiveness to dough." Gluten is what allows bread dough to develop those long, beautiful strands and create large open pockets of air (think about the inside of a loaf of Ciabatta compared to the inside of a muffin). Bread flours tend to be made from hard wheats that are higher in protein than regular flour, providing more gluten.

Hamelman, Jeffrey: bakery director at King Arthur Flour and author of Bread: A Baker's Book of Techniques and Recipes, a comprehensive book aimed at both professional and home bakers.

Hydration: the ratio of liquid ingredients (primarily water) to flour in the dough. A dough with 500g of flour and 340g of water has a hydration of 68% (340/500).

KA: Kitchen Aid or King Arthur.

KAF: King Arthur Four.

Lame: a thin blade on a handle, used to score (slash) loaves before baking.

Levain: usually used as a synonym for sourdough.

Leonard, Thom: A baker featured in ABAA whose Country French Bread is popular with many members of The Fresh Loaf.

Pâte fermentée (aka prefermented dough): a type of preferment in which the ingredients (flour, water, yeast, salt) are mixed in the same proportion as (usually) a basic white bread dough at about 65% hydration.

Poolish: A type of sponge. Typically quite wet, an equal weight of water and flour with an extremely small amount of yeast. For my batch of two French Bread loaves, I typically use 8 ounces of water, 8 ounces of bread flour, and 1/8 teaspoon a instant yeast. Mix it, cover the bowl, and leave it at room temperature overnight.

Proof: (1) the final rise of the shaped loaves before baking (2) the hydration of dry active yeast in water before it is added to the dough

RLB: Rose Levy Beranbaum, author of The Bread Bible, a book aimed at the home bread baker.

Score (aka slash or dock): to cut the surface of the loaf prior to baking. This provides for controlled expansion of the loaves during baking so they do not "break" undesirably. Scoring is also used to enhance the appearance of the bread.

Sourdough: a preferment that is a culture of wild yeast and bacteria that is perpetuated by the periodic addition of flour and water, or a bread leavened in whole or part by this culture.

Sponge: Also known as a "preferment," a sponge is a portion of the ingredients that is mixed ahead of time, typically overnight. Using a sponge extends the fermentation process longer and generally releases more

complex flavors in your loaf. It can also be used to soften dry ingredients (such as whole grains) and release sugars from the grains.

Appendix B: Further Reading

Coming soon.

Contributors

By opting into this project, the following contributors agree to contribute only original or copyright-free writing and photographs. They also agree to waive their right to revoke permission to use the images and copy contributed to this handbook and agree to release their work under a Creative Commons Attribution Non-Commercial Share-Alike License [9]. They grant the owner of The Fresh Loaf the right to wave the licensing terms in order to allow reproduction of all or portions of this work in a commercial setting, such as reproduction of an included recipe in a newspaper or magazine.

Floyd Mann

Jeff Miller

David Snyder

Eric Hanner

License

Source URL: http://www.thefreshloaf.com/handbook

Links:
[1] http://www.thefreshloaf.com/node/10370/fresh-loaf-handbook

[2] http://www.thefreshloaf.com/../../forums/advancedtopics/handbook
[3] http://www.thefreshloaf.com/../233
[4] http://www.gourmet.com/magazine/video/2008/03/bertinet_sweetdough
[5] http://www.thefreshloaf.com/handbook/shaping
[6] http://www.sourdoughhome.com/stretchandfold.html
[7] http://www.thefreshloaf.com/node/22990/illustration-stretch-and-fold-bowl
[8] http://www.thebackhomebakery.com/Tutorials/NoKnead.html
[9] http://www.thefreshloaf.com/../../handbook/license
[10] http://creativecommons.org/licenses/by-nc-sa/3.0/
[11] http://www.thefreshloaf.com