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MODULE 1 | TRANSCRIPT | LESSON 3

Artisan Bread Techniques

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Cooking School

In this lesson, we're going to share our favorite techniques for mixing, shaping, proofing, baking, and more. These are approaches that will help you become familiar and confident with the process. You'll see them used in the Practice Recipe videos and we'll go over them here in order of what step you take first, all the way to the last.

A few quick terms to know:

Proofing: an essential step in bread baking where you allow the dough to rest so the yeast can feast on the carbohydrates and then expel carbon dioxide into the dough, leavening and giving it lift. This step requires monitoring so the dough isn't over-proofed where the structure of the dough is compromised, and it isn't under-proofed where the crumb remains too tight, which is the result of a lack of enough carbon dioxide in the dough to create bubbles. Mastering proofing takes practice.

Fermentation: proofing is the step of fermentation in action. Simply, it's the breakdown of a substance (flour in our case) by bacteria and/or yeasts. In the fermentation process carbon dioxide is released, alcohols are created, and what that means for us bakers is simply bubbles and flavor in a bread.

Crumb: in the simplest terms, it means the interior texture of your bread—the tenderness of the bread, and the pattern and size of holes. All of these results can be manipulated with various proofing times, flours, and hydration levels in a dough.

Thoughts About Moisture

Gluten-free bread dough wants to be a bit more hydrated than conventional wheat dough. Moisture encourages beneficial microbial activity (fermentation). It can also help a gluten-free loaf have a more open crumb. When using a high-moisture, gluten-free dough, especially as a beginner, we recommend using an 8–9" loaf-pan to help stabilize the dough in the absence of gluten as it proofs, rises, and bakes. Free-formed breads tend to use less water than a loaf

because the water will weaken the shape. Without gluten, we have to strike a balance of hydration so the loaf holds its shape while allowing the dough to expand. Highly hydrated free-formed, gluten-free loaves tend to go horizontal instead of vertical, so finding just enough water to allow for happy fermentation, but not too much where the loaf bakes horizontally versus vertically is a fine line. It takes practice, but a loaf pan can always help with a very hydrated dough like that. Sometimes tweaking just 20–30 grams of water can make a difference depending on what ingredients you are using. Grab your baking journal and experiment with water amounts and vessels to find the sweet spot for you.

Measuring

As you know, we recommend using a baking scale for the most accuracy. Reference the course Resources for tips to make it work with what you have, or what you may want to add to your baking tools.

Sifting, Whisking, Psyllium, Flax

Gluten-free breads don't rise as high as wheat breads, and we want to help them along with certain techniques. If mixing dough by hand, ensure that all wet and dry ingredients are evenly incorporated into a dough by sifting or whisking them *separately* before combining. For example, if you add vanilla extract directly to a bowl of dry ingredients, they will soak it up into a clump and once baked, you'll likely only be able to find that vanilla in a random bite. But, if you whisk the vanilla into the wet ingredients first, then fold them into the dry ingredients, the vanilla gets distributed evenly throughout the dough for vanilla essence in every bite. Whisking and sifting dry ingredients also aerates and creates lightness, which is welcome in a whole-grain dough, which tends to be heavier. No matter what other methods you try for making a yeasted bread dough, sift or whisk dry flours and ingredients together when you can before combining with wet ingredients.

There are two ways that you can incorporate gluten-free binders, ground psyllium husk and ground flax, into a dough: directly into the dry ingredients, or by pre-activating (aka pre-hydrating) them first before combining into dry ingredients. Pre-activation of these binders requires a few extra steps, but it's our preference for bouncier, more open crumb. Unless you have strong hands, this pre-activation technique may require a standing mixer with a dough hook.

If you have a standing mixer, you can whisk all of the dry ingredients, except the psyllium and flax, and pre-activate them by whisking with water. They become a very gloopy gel, which looks unusual, but it works! It's just fiber. If you want to compare results of pre-activation with no activation, or you don't want to use a standing mixer, you'll simply whisk the psyllium and flax directly into the dry ingredients before mixing with the wet ingredients. Both methods work great, there's just a small difference in crumb and bounce if you pre-hydrate the binders.

We encourage you to try both ways of working with psyllium and flax. And of course, you can pre-hydrate psyllium and flax and mix the wet and dry ingredients together by hand if you have strong hands. Use a wooden spoon and a silicone spatula and fold, fold, fold until all ingredients are uniformly incorporated. Channel your inner standing mixer. Compare notes and preferences in your baking journal. We'll include steps for various methods with each recipe so it'll be easy to choose the one you prefer and follow along.

Mixing

You can absolutely use a standing mixer to mix dough, and we encourage it if you have hand ailments or weakness, but we have fallen in love with using our hands, wooden spoons, and silicone spatulas to mix and shape yeasted bread dough.

You can really get a feel for the dough, the hydration level, the aeration, and much more when you're doing the mixing work yourself—it helps you build confidence in the process and familiarity with the ingredients. Even if you pre-hydrate psyllium and use a standing mixer to mix, move to your hands when shaping.

When hand mixing, once the water is added, grab a strong spoon and work quickly to really incorporate all ingredients together—you'll feel the flour start to absorb the liquid. As you stir, the texture will change from liquidy to dough relatively quickly. Once it becomes more challenging to stir, use a silicone spatula (we like the flat kind, not curved or spoon-like) to scrape excess dough off the wooden spoon and back into the dough. Then, choke down on the spatula—holding close to the silicone and handle joint gives you more control and mixing power. Use the spatula to scrape around the sides of the bowl, turn over the dough, scooping from the bottom of the dough up and over the top of the dough over and over to incorporate all ingredients. As you do this, you can press the center as well.

Reference the Practice Recipes for ideal dough texture. If your dough looks too watery, be sure to let the dough rest for 2 minutes so it can absorb the liquid. If it's still too watery, add 1 tablespoon of flour at a time to the dough. When you do, sprinkle the flour over the dough evenly—like a fallen snow—for more effortless and even distribution, then mix in by hand. Do let it rest for 30–60 seconds once mixed as it will still soak up liquid. If still too watery, repeat these steps until your dough looks like the Practice Recipe video. If your dough is too dry, take these same steps, but use 1 tablespoon of warm water at a time until you reach the correct consistency.

Shaping

You don't have to knead gluten-free bread because kneading is primarily a technique used to build up gluten in a gluten-full dough. But some handwork in a gluten-free dough helps incorporate ingredients well, it helps you become familiar with the nuance of the dough (which in turn builds confidence and familiarity) and ultimately, it helps you shape a loaf beautifully. It may take some practice, but here are some helpful tips.

You want to dust your working surface and your hands with a very fine-ground flour like brown rice or hulled buckwheat flour, oat works too. Note that arrow-root will become gummy when wet, and bean-y, grassy, or strong-tasting flours

like garbanzo or quinoa are ones you may want to avoid for dusting. You don't need a special work surface—a smooth countertop will do just fine for shaping. You really want a light dusting of flour—too much will dry out your dough and it may crack. We like to start by rubbing some flour between our palms—this amount is the kind of light coating that should be on the countertop as well. You want just enough that the dough doesn't stick.

Turn your dough out onto the lightly dusted surface and press/punch it down. Grab one side and roll it up. Flip the dough over and use your knuckles to punch the seam to help close it. Then, grab the bottom end and roll it up. Then flip the dough so seam-side is down. Use hands to lightly form the round and twist in the direction that feels most comfortable to you—clockwise or counter-clockwise—as you gently coax the dough underneath. Rotate and shape 5–7 times or more, then transfer to your floured banneton or proofing vessel so the seam side is up.

Once you master shaping, you won't really be able to detect the seam. The seam will ultimately be at the bottom of your baked loaf, but for you perfectionists, you can dampen your fingers under the faucet, or spritz the seam with water and gently pinch and press the seam to smooth it out. Gently rehydrating the flour will make a little paste that you can use to fill any cracks.

Proofing

In Britain, they call it “proving,” in most American kitchens it's “proofing,” but it's all the same action—the time the dough needs to rise or has risen. This is the time period where our microscopic friends are feasting and adding carbon dioxide bubbles to the flour and water mixture, giving it height and crumb.

To proof your dough, you can transfer shaped dough directly to a lined or greased loaf pan to rest and you will bake it directly from that vessel. Or, you can make it a little flour-dusted bed to rest in where you will ultimately bake it free-form without a loaf pan.

For free-formed, you can use a 6"–7" banneton (aka proofing basket) or a 6"–7" bowl and some fabric. Your bowl or banneton can be oval or round.

When using a banneton, generously dust the bottom and sides with fine-ground brown rice or hulled buckwheat flour. Gently press and pack the flour into all of the grooves. If using a bowl, line it with a scrap of muslin, a tight-weaved cheesecloth, some lace or burlap, an old t-shirt, whatever works. Generously flour the fabric with fine-ground brown rice or hulled buckwheat flour. Transfer your shaped dough into the floured proofing vessel so seam side is up. Cover with a clean kitchen towel lightly dampened with warm water, or place the dough and vessel inside a large plastic bag. A plastic bag creates a little greenhouse of warmth and moisture and helps the dough rise beautifully. If you choose to use a towel to cover your dough, every so often, spritz your dough top with a water sprayer to keep the top hydrated, and keep it in a warm spot in the kitchen.

Storing Dough/Cold Fermenting/Retarding

You can absolutely make dough in advance, and after the initial rise, store it in the fridge for up to two weeks, grabbing amounts you need to bake when you want. The longer your dough sits in the cold, the more developed the flavors will be because it's continuing to ferment. As long as there are sugars to eat, yeast will continue to create CO₂. Every day that goes by will yield a different loaf flavor—it's really something special. This is something you can do to store dough, yes, but it's a technique used by bakers all over the world to build flavor in a bread. The practice recipes this week makes one loaf of bread each. But feel free to double or triple the batch if you like and store the extra in the fridge in a lidded glass storage container. If the surface of your dough is looking dried out, spray with water and/or fold it together with 2 tablespoons of water until hydrated again. Add more water 1 tablespoon at a time if needed. When you want to make some bread, just tear off some dough, shape it and allow it to rest on the counter for about 15–20 minutes, then bake.

Baking Vessels

Ideally, you want to achieve something called “oven spring” when you bake your loaves and boules and it’s best achieved with high-heat conducting (and tolerating) cast iron, ceramic, or stoneware baking vessels. How you use them depends on your oven, and what works best for you, so try our variations to discover exactly what that is.

It’s so important that you use an oven thermometer to gauge temperature in your oven since some ovens can be off temperature by 80°F! If your loaf doesn’t come out right, the odds of it being temperature related are very good.

Overall, preheat baking stones and cast iron with the oven so everything the dough comes into direct or indirect contact with when baking is nice and hot. A baking stone is a large, flat, stoneware “tile” that gets heated along with the oven. It can serve as a distributor of heat and it can be used to bake on directly. They’re as close as we can get to a real hearth-style oven. If you don’t have a baking stone, you can try a cast iron skillet turned upside down, or even an unglazed quarry tile from the hardware store. Ensure excellent results and always preheat a baking stone and cast-iron vessels at full temp for 45–60 minutes before baking bread. You can do a 25–30-minute preheat, but it’s worth the time to do it right. You’ll get the best results.

If you have a gas oven, we recommend a cast-iron Dutch oven or baking vessel like the Challenger Bread pan, with a lid. Make sure you check your course Resources to learn about oven differences, but in general, a gas oven is a humid heat which inhibits crust formation and browning. A lidded cast-iron baking vessel will create the ideal environment for baking a brown, crusty, artisanal loaf. If you want to or need to bake without a lid, bake your bread in an open cast-iron vessel on the bottom rack and place a baking stone or cookie sheet or cast-iron grill pan on the top rack to bounce rising heat back down onto a loaf. You can also do the exact opposite layering of vessels in the oven: bake on the baking stone on the bottom rack and place the cast-iron skillet face-down on the top rack to circulate the heat better. This trick helps create a hotter, less

humid environment in a gas oven. You can also bake a bread in a loaf pan within a baking vessel with the lid on for more heat. Track what you try in your baking journal.

If you have an electric oven (more of a dry heat), you can also use a lidded cast-iron vessel, but you should have success by also baking simply on a baking stone or in an open cast-iron skillet without a lid. If baking in a loaf pan, preheat the oven with a baking stone in it on the middle rack and set the loaf pan on the stone to bake for extra direct heat and possible amplified oven spring. You can also preheat the oven with a large cast-iron skillet that's face down on a rack and set your loaf pan on top of that for extra heat. Again, track what you try in your baking journal.

Scoring

We want the dough to expand and grow with a beautiful oven spring—we don't want our bread to rupture from all the gaseous build up, so scoring helps the bread release gas in a controlled manner. It makes our breads look pretty artisanal, too.

When the oven is fully pre-heated and your dough has risen, you can liberally dust the top of a free-formed loaf with flour (brown rice or buckwheat are our favorites) to provide contrast between the scoring pattern and the dough, or you can skip the dusting. It's 100% baker's choice on the aesthetics of the loaf. Then, use a lame or paring knife to score the bread about ½" deep holding the blade at a 30°–45° angle.

Reference your Resources for scoring pattern ideas. If your scores look a smidge jagged, don't worry, they'll bake up beautifully.

Transfer

For free-formed loaves, you'll want to place them on a cut sheet of parchment that's at least 2" wider on all sides than your dough. This will help you lift, slide, transfer, and remove the dough easily to and from baking vessels.

Oven Spring

The rising process for our dough doesn't end on the counter. Once we put a proofed dough into the oven, we want it to inflate even higher—as much as we can get. This final expansion of dough is called “oven spring,” and it occurs primarily in the first 10–15 minutes of baking, when the yeast feels the oncoming heat and amps up its fermentation and respiration—gettin' it while the gettin' is good—converting sugars to CO₂ and alcohol (flavor and bubbles). This feeding frenzy means more gasses will build up which will be trapped in our psyllium/arrowroot web. Ethanol and water in the mix also evaporate and expand with the heat until the interior of the dough reaches a certain temperature and the yeast stop their binge (they begin to die at around 120°F–140°F). At that point, the loaf ceases to rise. Oven spring is a pretty solid indicator of the type of crumb your bread will have. The more substantial the oven spring the lighter, and airier the crumb. Less oven spring results in a denser crumb.

Baking with Steam

If you want beautiful domed loaves and rich brown crusts, you'll want to bake with steam like the pros do. It can be easily done in your oven at home. Steaming helps to keep the crust soft and expandable at the beginning of a bake so it's not resistant to oven-spring. Water molecules also settle in on the crust and helps sugars in the dough caramelize, giving us glossy, brown exteriors. After the initial 10–15 minutes, the crust needs to dry out, so no more steaming is needed.

You can steam a few ways depending on what baking vessel you're using and what kind of oven you have. Make sure that you check your Resources to learn about oven differences. Again, if you have a gas oven (high-moisture heat), you'll likely need a cast-iron baking vessel with a lid to get a brown crust—like a Dutch oven or a Challenger bread pan. If you have an electric oven (dry heat), you can steam and bake many ways without a lid and get a brown crust. Try a variety of tools and techniques to discover what works best for you and your appliances.

Baking/steaming in cast-iron with a lid: preheat your cast-iron baking vessel with the oven so it's nice and hot—ideally, allow it to heat for 45 minutes before baking with it. When ready to bake your dough, place it into the vessel with a parchment sheet underneath and then drop 2 ice cubes on either side of the dough and close the lid to trap the steam. Then, place the entire vessel in the oven to bake according to the recipe.

Baking/steaming without a lid: When preheating your oven, place a metal broiler tray or metal loaf pan into the bottom of the oven (on the oven floor or the bottom rack) so it gets nice and hot. If baking on a baking stone or in a cast-iron skillet, allow those vessels to heat up in the oven for 45 minutes before placing dough into/onto them. When the loaves go in, quickly add 1 cup of cold water or a handful of ice cubes into that pre-heated tray. Work quickly so you can close the door and maintain those desired high temperatures! The steam will circulate in the entire oven helping your crust brown.

DO NOT use a glass pan for steaming. When water comes in contact with it, especially at high temperatures, it will shatter the glass. Don't let this happen to you.

Testing Doneness

How dark you like your loaves is a personal preference, but the darker the loaf, the more flavorful the bread. The French use the term “bien cuit” which means so browned, it's almost burned—that's the goal for many bakers.

If you have a cooking/baking thermometer, this is one of the best ways to test whether your bread has cooked through. Internal temperature of bread reaching 210°F indicates done. Gluten-free breads, as we've mentioned are more hydrated than conventional breads, by design and because the ingredients include bran and other moisture-loving components—this makes their bake times longer as they have more moisture to dry out during baking.

You can also check the doneness by holding your bread in a protected hand (with a towel or oven mitt)—the loaf should feel relatively light. If it feels too heavy yet has some decent oven spring, pop it back in the oven, reduce the temperature to 400°F, and bake for another 10-15 minutes. You can also knock on the bread. Listen for a bit of hollowness. Hollow sound means done. Muddy and muffled? Pop it back in the oven, reduce the temperature to 400°F, and bake for another 10-15 minutes—your loaf needs to dry out a bit more. Note that it will also change in sound as it cools and sets outside of the oven, too. Once cool, a gluten-free loaf of bread will sound more hollow than when it came out of the oven. It will also shrink a bit as steam within the loaf escapes. With practice, you'll fine-tune your ear and eyes for doneness. You don't want to cut into a loaf until thoroughly cooled or you'll tear your bread, meddle with the nuances that occur during cooling, and ultimately end up with gummy bread interior sticking to your knife. Patience is key.

If your bread has cooled and it's still a bit gummy, make sure you get an oven thermometer to see if your oven is hot enough. You can also pre-slice your bread to store it, this allows air to get into the cracks of the slices and dry out a bit. You can also place your bread back into a warm oven 300°F–350°F and bake another 20–30 minutes to dry out more if needed.

Cooling

We'll just say this one again: you don't want to cut into a loaf until it is thoroughly cooled or you'll end up tearing the loaf and gummy bread interior will stick to your knife. Gluten-free ingredients need to set, and cooling allows this magic to happen. be patient, we know it's hard to do when the kitchen smells so good.

Remove bread from oven and allow it to cool completely on a cooling rack for at least 2 hours. If you baked a sandwich loaf, after 10 minutes, the loaf will pull away from the edges of the pan. At this time, lift it out and place on a cooling rack so the sides dry out. Remove any parchment from underneath if using as it traps moisture. You don't want soggy bread.

Artisanal crusts can be too hard for some and not enough for others. If you prefer a softer crust, when you remove your bread from the oven, transfer to a cooling rack and cover with a kitchen towel to trap the steam which will soften the exterior a bit. You can also play with adding 15–30g of oil (1–2 tablespoons) to your dough. If you do, reduce the water amount by how much oil you add.

Slicing

It's normal for gluten-free, low-starch breads to have some moisture. Use some of the drying tips we've mentioned if needed to suit your tastes, but it's just fiber and whole-grain ingredients. You didn't do anything wrong. Always use a serrated bread knife to slice easily without tearing. Toasting your bread dries out any moisture of course, but you can also pre-slice your entire loaf and assemble it back into a loaf to store, pre-slicing helps air reach the inside to dry it out some. You can also place it pre-sliced but in loaf shape into an oven set to 300°F–350°F for 10–20 minutes to dry out more. Then cool completely and store.

Storing

In general, active-dry yeasted breads can be stored for 1–2 days on the counter in an airtight container, then moved to the fridge for up to 14 days.

Breads will dry out the longer they are stored, but they can always be used for toast, croutons, and bread puddings. If chilled, thaw to room temp to enjoy, or toast slices.

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Well, you now officially have some know how about the techniques to bring sandwiches back in your life! And French toast, and bread pudding, and stuffing, and smashed avocado toast. So many options. But first, take that lesson recap! Happy baking.