**So How DOES Bread Bread?**

**A History of Bread**

Up until recently, it was thought that the earliest recorded evidence of bread was from Sumeria approximately 10,000 years ago. These ancient societies were the first to cultivate cereal grains. Just last summer, though, the charred remains of bread were found at a site in Jordan from 14,000 years ago. These people were not farmers, and would have foraged for wild cereal grains and other starches to make their bread.

These breads were flat, unleavened breads. Yeasted breads make their appearance years later, in Egypt, where the warm, moist weather of the riverbanks was great for cultivating yeast. Wild yeast settles into dough left out and bam, you’ve got leavening.

Fast forward to France, buncha time later. Traditional mixing methods, which are slow, gentle, and have long rises, give way to the intensive mixing method as the electric mixer is invented. The intensive mix means mixing the dough hard and fast, which develops gluten quickly and shortens the initial rise. It produces bread with huge, puffy volumes, and a crumb that is tight, cottony and bright white. Unfortunately it lost out on color, flavor, texture, and keeping quality. It was FAST, though, and since the price of bread was fixed but the price of flour was not, bakers had to make as much as possible to make a living.

The improved mixing method was developed to find a good medium. It mixes more than traditional methods, which leads to a faster rise, but it’s not AS hardcore as the intensive mix. The addition of preferments (things like sourdough starter, sponges, levains, etc) and the optional step of an autolyze add extra awesome to bread.

**How to Bread**

* Step One: Scale the ingredients. Measure it all out. By weight, thank you very much.
* Step Two: Mixing. Combining the ingredients together into a dough.
* Step Three: Kneading. Working the dough so that the gluten develops. Most doughs are done when they pass the “windowpane test,” where a bit of dough can be stretched thin enough to see through without tearing.
* Step Four: Bulk fermentation. The initial rise. Most doughs should rise until they double in size.
* Step Five: Punch down the dough and portion out the pieces (if you’re making more than one loaf or rolls).
* Step Six: Intermediate, or bench rise. Again, not necessary if you’re making one loaf, although some recipes call for punching the dough down several times during its rise.
* Step Seven: Final shaping.
* Step Eight: Proofing. Many doughs will double in size again. All will become soft and poofy, and hold a dent if you push one with your finger. This stage involves some intuition.
* Step Nine: Baking. Some breads are slashed before baking, some not. Some brushed with egg or butter, some not. Bread is cooked when the internal temperature is 190-200F (depending on the bread) and the crust looks nice. If you must, err on the side of slightly overdone, because undercooked bread is gross.
* Step Ten: Cooling and storage. The cooling is the final part of the cooking process, allowing the starches to set up properly. Cutting into a loaf too soon can result in a gummy texture. Always wait until bread is completely cool before wrapping it up, so it doesn’t sweat and get soggy.

Optional Step Zero: Make a preferment! Preferments make bread rise better, brown better, have better flavor, crumb structure and keeping quality. There are many different kinds of preferments. Here’s a tiny bit of information to get you started.

* Old dough: keeping back up to 20% of today’s bread dough to add to tomorrow’s bread.
* Poolish: What I use because I think it’s the easiest. Remove about eight ounces each flour and water from the recipe and mix with half the yeast. Let sit in a warm place overnight. In the morning it will be stinky and bubbly and ready to go.
* Sourdough: There are a million recipes online for making a sourdough starter. I recommend Food Wishes on youtube in all things. Wild yeast from the air grow in the floury little home you make for them. Every once in a while the starter is fed with more flour and water. The famous San Fransisco sourdough has been around for over 150 years! But if you brought a piece of it to Michigan, within a month, the local yeasts will have taken over the colony and you’ll have Michigan sourdough. The good thing about sourdough is you get a pet bread monster to feed and love. The bad thing is that if left unchecked, that bread monster will grow faster than a wet mogwai and take over a small town.

Optional Step One and a Half: Autolyse. Mix together the flour and water and allow to sit for 30-60 minutes before adding the rest of the ingredient and continuing to knead. The purpose of autolyze is to slow fermentation, improving flavor and keeping quality, stretchier dough that is easier to shape and has a better rise and crumb, and improve gluten formation.

**So What is Gluten, Anyway?**

Gluten is the magical thing that happens when two proteins found in wheat, gliadin and glutenin are agitated in the presence of water. (there are other grains that contain gluten proteins, but let’s stick with this for now.) Gluten forms a web of protein in doughs and batters that helps give baked goods their structure. Yeast and chemical leaveners both create little gas bubbles that get trapped in the gluten matrix and blow up in the oven. This is what gives baked goods rise. It is chewy, which is usually good for bread and bad for delicate pastries. A lot of pastry work is about getting just the right amount of gluten so that a thing has structure, but not so much that it becomes tough.

Approximately 1% of the population has gluten sensitivity. Celiac’s disease is the most well-known, although there are other sorts of intolerances that vary in intensity and sensitivity. A person will full blown celiac’s can become very ill if they consume even a very tiny amount of gluten. True gluten free baked goods have to be produced in dedicated gluten free facilities, with no chance of contamination. Other people’s sensitivities are less severe. Fortunately, for the other 99% of us, gluten is A-okay.

Certain ingredients inhibit gluten formation, namely fat and sugar. That makes baked goods tender. All fats are shortenings, because they SHORTEN gluten strands! Mind. Blown. A lot of grains and inclusions can cut up the gluten strands, which is why multigrain bread can be so heavy.

**Recipes!**

Moving on from bread, here some great, basic recipes that will never let you down.

**Pate a Choux aka Choux Paste**

*Literally "cabbage paste" in French, this batter is used for eclairs, cream puffs, profiteroles, gougers, etc.*

1 cup flour

1 cup water

1 stick butter

1 pinch salt

1 cup eggs (4-5 eggs)

Bring the water, salt and butter to a boil. Dump the four into the pot all at once and stir until a thick dough forms. Cook, stirring constantly, until a skin forms on the bottom of the pot, and the dough smells like cream of wheat, or cooked piecrust. You want to cook out as much water as possible so that the batter can drink up all the eggs.

Dump the dough into a bowl or a stand mixer, and let it cool for a few minutes. (You don't want to scramble the eggs) and then start mixing it up with beaters (hand mixer) or paddle (stand mixer.) Beat in the eggs one at a time until the batter is thick and smooth.

To use, you can use a spoon or scoop to make little round mounds, or you can pipe out rounds or long eclairs. Use a wet fingertip to smooth out any points so that they don't burn.

Bake at 400F until very well browned. Cool completely, then fill with whatever you want!

-Classic eclairs are filled with pastry cream (vanilla, or any flavor you like) and topped with chocolate glaze or ganache

-I like to make rounds and fill them with pastry cream and sliced strawberries, and then top with ganache. GREAT for parties

-Ice cream and fudge sauce are a classic Michigan dessert

-There's no sugar in the batter, so this is perfect for savory fillings like chicken salad or spinach dip

--Gourgers are a classic preparation: add a bunch (the amount is up to you, but I like a lot) of shredded hard cheese (asiago=win) to the batter. I also add minced garlic and a lot of chives. Scoop little round mounds. Cheesy poofs! I make these for thanksgiving because they are fast, easy, and hold gravy.

**Pastry Cream aka Crème Patisserie**

*The easiest thing you ever shoved up the backside of an éclair. So easy that you’ll wonder wtf is up with the people on bakeoff when they mess it up.*

2 cups milk

1/4 cup white sugar

2 egg yolks

1 egg

1/4 cup cornstarch

1/3 cup white sugar

2 tablespoons butter

1 teaspoon vanilla extract

In a heavy saucepan, stir together the milk and 1/4 cup of sugar. Bring to a boil over medium heat.

In a medium bowl, whisk together the egg yolks and egg. Stir together the remaining sugar and cornstarch; then stir them into the egg until smooth. When the milk comes to a boil, drizzle it into the bowl in a thin stream while mixing so that you do not cook the eggs. Return the mixture to the saucepan, and slowly bring to a boil, stirring constantly so the eggs don' t curdle or scorch on the bottom.

When the mixture comes to a boil and thickens, remove from the heat. Stir in the butter and vanilla, mixing until the butter is completely blended in. If you’re concerned about lumpy bits, put through a sieve. Pour into a heat-proof container and place a piece of plastic wrap directly on the surface to prevent a skin from forming. Refrigerate until chilled before using.

**Basic Ganache**

*It’s ganache. What else can I say?*

Equal parts by weight heavy cream and good dark chocolate. Chop the chocolate up (or use chips), heat up the cream until steaming, pour over the chocolate, let sit for a minute, then whisk until smooth. At a pinch of salt and titch of vanilla if desired.

If you want something thinner, more cream. Thicker, less cream. Now it’s time to use this for EVERYTHING.

Drizzle over a cake for a nice shiny glaze.

Use hot as a delicious dip for for all the things.

Allow to cool until soft set (about the consistency of peanut butter) and whip into the best frosting ever.

Scoop into balls, coat with tempered chocolate, and dust with cocoa for truffles.

Keeps in the fridge for basically ever.

**Salted Caramel Sauce**

*The best caramel sauce I have ever had, ever.*

 1 ¼ cups sugar

Water

Squirt of corn syrup (optional)

1 cup heavy cream

Half a stick of butter

Kosher salt to taste (I like a heavy pinch)

Sugar goes into pot with just enough water to moisten. Add a glug of corn syrup, if you want, to protect against crystallization. Cook on medium high, stirring occasionally. Wash down the sides of the pot with a wet pastry brush to prevent crystallization. As the mixture thickens and starts to brown, swirl the pot to keep it even. When it reaches a nice deep amber, pour in the cream. Do not be afraid! it will sizzle and bubble and clump up. It’s fine! just keep stirring until the mixture evens out and thickens slightly. Turn off the heat, add the butter and salt, and stir until melted. Cool until it is no longer hot like lava, and put on EVERYTHING.

**Basic Scones**

*Lightly sweet, crumbly, and a perfect base for all kinds of flavors. Add cranberries, orange zest and orange glaze for a classic combination. Or lemon. Or chocolate chips. Or cinnamon, pecans, and a maple glaze. The list goes on.*

Pastry Flour 1# (8oz each cake flour and AP flour, or just all AP if that’s all you have)

Sugar 4oz

Baking Powder 4tsp

Salt

Butter 6oz

Eggs 2

Vanilla

Cream 7-9oz

Mix together dry. Rub butter in with your fingers until like coarse meal. Add eggs, vanilla and cream and mix until just combined. Make 2oz balls, or cut out rounds, or triangles. Whatever floats your boat. Can bake right after mixing, or chill. Brush with egg wash and bake at 375 12-15ish minutes until just barely golden.

If adding things like fruit or chocolate, mix in chunkies before the wet ingredients. Either sprinkle with coarse sugar before baking, or drizzle with glaze afterwards. Makes about two dozen.

**Better Than Box Chocolate Cake**

*There are a lot of great chocolate cakes in the world, from dense and fudgy to light and springy. This cake has all the best parts of a box mix cake, with a very moist, tender crumb, but with a deep chocolatelyness of rich cocoa. This cake has the added benefit of being made of mostly pantry ingredients, making it easy to throw together without a trip to the store. I’ve started keeping powdered buttermilk on hand just so I can always make this cake. It IS a pretty big cake, though. Half a batch makes two eight inch layers, which might be an easier volume of cake to handle. Consider frosting with the whipped ganache recipe above.*

1 1/2C. hot water

1 1/2C. unsweetened cocoa powder

3 c. sugar

4 eggs

1/2 c. vegetable oil

2t vanilla

1 1/2 c. buttermilk

1 tablespoon baking soda

1½ teaspoons baking powder

1½ teaspoons salt

3 c. all purpose flour

Sift cocoa and combine with hot water. Let sit.

Whisk together eggs, sugar and vanilla

Whisk in oil, then buttermilk, then cocoa mixture.

Whisk in baking soda, powder, and salt, then whisk in flour.

Divide mixture between three greased 9" cake pans

Bake at 350F 30-45 minutes or until a toothpick comes out clean/the cake springs back when lightly pressed in the center.

Let cakes cool before stacking and frosting with your choice of frosting.