THE BAKERY

"SIMPLE" IS OFTEN THE HARDEST ACT TO PULL OFF, and nowhere in the café is that more evident than in the bakery. There are seven basic ingredients that are the backbone of most baked goods (in no particular order): flour, eggs, sugar, salt, a leavener (chemical, such as baking powder and baking soda, or biological, such as yeast), a fat (butter and oil), and a liquid (water, milk, and heavy cream). These seven key ingredients, in different proportions and combinations, can produce thousands of varieties of breads and viennoiserie. They are by no means the only ingredients, but they are the most utilized. While some items contain all seven ingredients and some may contain even more, we'd be hard pressed to find a recipe with less than three of them.

THIS CHAPTER focuses only on the methods for specific varieties of bread or viennoiserie. What makes them special? A combination of a consistent respect for technique and execution, an understanding of the product's origin, the use of high-quality ingredients, and a refined finished product that always has the right texture and the right flavor. There is always a way to make things better, and it only takes a few more steps to make them that way. But it has to be done consistently.

The bakery is typically a low-cost/high-profit area, where money is made on volume production. A large quantity of bread can be produced at a low cost. This is not necessarily the same in other areas of the shop, such as pastry, which has a low food cost and high labor cost, or savory items, which have a high food cost. Once the product is baked and, in some cases, garnished, it needn't be refrigerated, and it is sold as is. The basic ingredients are generally inexpensive, except perhaps for butter. And this is where trouble usually begins. The biggest mistake any establishment can make is to cut corners on quality ingredients. Margarine will never be all that butter is, as far as flavor, texture, quality of the finished product, and nutritional value.

It is by no means easy to produce high quality-baked goods. However, it is very easy to produce average to ordinary baked goods. Unfortunately, a lot of the basic techniques are often overlooked by bakers in order to trim down food costs and labor expenses; the clearest example is in laminated products, where technique is key and so many variables need to be controlled (see lamination, page 40). This practice could ultimately hurt the bottom line, though, because it is not business-smart, at least not in an obvious way. Why is your customer going to come to your establishment and not the one across the street? The answer is very simple: Your product is better. It can be better because it is made by following production techniques consistently and utilizing quality ingredients. Consumers are becoming more and more sophisticated and understand that the quality of what they eat is very important, and not just for health reasons. If they like the food, they'll come back. This is not a book on healthy eating—the recipes feature butter and fat. However, all good things can be enjoyed in small amounts.

While the emphasis here is primarily on technique and execution, there is another side to baked goods that is very hard to teach and is perhaps a reason why some bakeries and cafés aren't successful. Baked goods, especially those that contain yeast, almost have a life of their own, and it is the baker's job to coax and manipulate them in the right direction. For me, the number-one baked good, the king of the bakery if you will, is the croissant. It is the benchmark of the bakery and, as a result, of the baker as well. The information on croissants on page 38 will certainly get you started and point you in the right direction, but practice is imperative to actually make the perfect croissant. In the bakery you don't only use the recipe; you need to use all of your senses. You need to feel the dough; see it; hear it as it mixes; smell it when it is raw, when it is baking, and when it is done baking; and finally, taste it. When you do this hundreds of times, you will understand the croissant completely, and even then you will still continue to learn about it throughout your life as a baker.

There are very few things in life that I think are as beautiful as a box full of fresh baked goods. Early in the morning, you go to the café, order one of this and two of that and a jar of marmalade or jam, you get some coffee and quickly take it all home, where ideally there is some good butter sitting out. You sit at your kitchen or dining room table by yourself, or with your family, friends, or whoever happens to be home, and take a bite, and then it all clicks. You realize that the baker is a true craftsman because that bite of Danish you just took is perhaps the best you have had in your life, and there is nothing better in the world at that moment, except for the next bite.

THE SEVEN KEY INGREDIENTS

The following are the basic properties of the different ingredients used for yeast-raised breakfast pastries as well as all chemically leavened items and bread items in this book. It is important to understand how these ingredients interact with each other and how they are mixed, retarded, fermented, shaped, proofed, baked, and finished.

leaveners

YEAST

Yeast is what will make the dough grow and expand through proofing (fermentation). CO_2 and alcohol, which are responsible in part for flavor as well, are by-products of fermentation; they are trapped by the dough and are eventually expelled from the dough during the baking process. There are two different kinds of yeast.

commercial yeast: Commercial yeast is available in three different forms: fresh (or compressed), instant, and active dry. The latter is the kind found at the supermarket and is not recommended for commercial

baking. The recipes in this book use instant yeast for all dough. Instant dry yeast can be incorporated directly into the dry ingredients of a recipe right before mixing, while fresh yeast and active dry yeast need to be dissolved in a warm liquid such as water or milk before they can be combined with the other ingredients. The most commercially available brand of yeast is SAF, which produces "red label" instant yeast and "gold label" instant yeast (see Resources, page 540). The red label is better for lean dough (baguette, ciabatta, Breton, Francese, country), and the gold label is best for dough with a high sugar percentage or acidity, such as brioche, croissant, and Danish. The strain of yeast used in gold-label yeast can withstand larger amounts of sugar and acidity than red-label yeast. Yeast eats sugar, which promotes fermentation; too much sugar leads to too much fermentation and overproofing.

If fresh (compressed) yeast is all that is available, simply multiply the amount of instant yeast in the recipe by three. The resulting number will be the amount of fresh yeast needed for the recipe. However, since fresh yeast contains a percentage of water, water needs to be subtracted from the recipe. To do this, calculate the amount of fresh yeast to add, and then subtract the amount of instant dry yeast originally needed. The resulting number will be the amount of liquid that will need to be taken out of the recipe.

For example:

A recipe calls for 100 g/3.5 oz instant dry yeast.

100 x 3 = 300 g/10.5 oz. This is the amount of fresh yeast needed for the recipe. To calculate how much liquid to subtract from the recipe:

300.03 – 100 = 200 g/7 oz. This is the amount of liquid that needs to be taken away from the recipe.

Active dry yeast is available in supermarkets for the home baker. It lacks the strength and quality that instant dry yeast has. Since the process required to produce this yeast is very aggressive, most of the yeast found in a package is dead. It is not recommended for use, even at home.

wild yeast: Wild yeast is obtained from ambient yeast, or yeast that is found in the environment. Certain foods like grapes, grape juice, raisins, whole grains and flours, yogurt, and honey contain a proportion of this wild yeast. In order to harness it, one of the ingredients mentioned above is combined with an equal amount (by weight) of water and is left to ferment for 4 to 6 days, after which it is strained. Some bakers add a small amount of sugar, about 5 percent of the total weight, to speed up the fermentation process. This resulting liquid is known as a "chef," and it can be used to make any variety of pre-ferment (see below). The chef can be used in combination with commercial yeast, but purists will argue that the very best way to make bread is by using a chef in the pre-ferment instead of commercial yeast.

PRE-FERMENTS (a.k.a. Starters or Levains)

These are used to improve the character of bread (flavor, crumb, texture, crust, and aroma), but more importantly they are used to "seed" another dough to begin the fermentation process. They are used occasionally for viennoiserie but are mostly used for breads. In this book pre-ferments are used in the sourdough and the lean dough breads.

There are four basic types of pre-ferments, which can be tweaked and modified to create hundreds of varieties. Pre-ferments do not have the gassing strength that straight commercial yeast has, but they make up for it by improving the finished item's flavor, since fermentation takes longer. The longer the fermentation, the more time the starches in the flour have to break down, and this has a direct result on the flavor, crumb, crust, and color. It is important to remark that flavor comes from the flour and the by-products of yeast fermentation (CO_2 and alcohol), not from the yeast itself, which is why some bakers will only use pre-ferments for their dough. The strength of a pre-ferment will depend on the environmental conditions in which it is kept as well as the ingredients used to make it. For viennoiserie like croissants, which are very finicky, straight instant yeast (gold label) is used instead of pre-ferments in order to maintain a consistent product.

pâte fermentée: Pâte fermentée is a dough in itself, made with yeast (fresh or instant), flour, eggs, butter, salt, sugar, and water. It is mixed until full gluten development is obtained (see Full Gluten Development, page 10), fermented, and then added to other ingredients (such as more flour, eggs, butter, and sugar), mixed again, and then fermented again to obtain a second dough.

Some bakers simply reserve some dough from one batch and add it to another new dough, then save a piece of that dough for the next dough, and so on.

Use pâte fermentée for lean dough. It contributes body and flavor and helps strengthen the dough.

biga: A biga is similar to pâte fermentée but contains no salt. As noted below, salt controls or slows down the yeast. Since there is no salt, a biga will move (proof) the dough a lot faster. Bigas are also made expressly to be a pre-ferment, unlike pâte fermentée, which can be

a piece of ready-made dough. Both the biga and pâte fermentée are firm in consistency compared to the two following pre-ferments. Use firm pre-ferments for firm doughs and looser pre-ferments for looser doughs; keep in mind that pre-ferments can be combined to obtain the desired result.

Use the biga for lean dough. It contributes more flavor than other pre-ferments as well as acidity. It also helps strengthen the dough.

poolish: A poolish is a type of starter made by combining equal parts (by weight) of water and flour, and a small amount of yeast (.25 percent of the weight of the flour if it is fresh yeast and .08 percent if it is instant). Dough that will have a poolish added as a pre-ferment will typically have another amount of yeast added before it is mixed. Use poolish-style starters for lean dough (see recipes on page 109). A poolish contributes high gassing power for loose doughs such as ciabatta, which will result in a very open crumb. Sometimes it is used in combination with other pre-ferments for firmer doughs. The flavor is typically mild. A poolish helps to denature doughs and, as a result, tenderize them.

sponge (a.k.a. regular sponge): The ratio for a sponge is typically one part water to two parts flour, with a larger percentage of yeast added than for a poolish. This pre-ferment is a lot faster than poolish precisely because of the yeast, and it doesn't need as much time to ferment before it is mixed into a dough. There is also a small percentage of yeast that is added to the dough before mixing. This dough will also proof a lot faster than a dough made with poolish, which will have a negative impact on the final flavor.

Use a sponge for enriched doughs. It helps to jump-start the fermentation process and should be used for doughs that need to move quickly, or at least faster than lean-type doughs.

CHEMICAL LEAVENERS

The most important function of chemical leaveners is to increase the size or volume of a dough or batter. They do so when they break down and form carbon dioxide (a gas) during the mixing process but more so while baking, therefore expanding the batter or dough. This increase in volume (or leavening) also contributes to the tenderness of the baked product, since the expanding carbon dioxide will thin out the cell walls of the baked product. Finally, they affect the pH of a batter or dough and, depending on the leavener, will decrease the pH (baking powder) or increase the pH (baking soda). These adjustments in pH have a direct result on the crumb, crust, color, flavor, and general texture of the baked dough or batter.

baking soda: Baking soda is activated through interacting with an acidic liquid, such as buttermilk, yogurt, or créme fraîche; and heat. Baking soda will produce carbon dioxide on its own when it comes in contact with moisture, but it will require copious amounts of moisture to leaven a dough or a batter properly. When it is combined with an acidic liquid, baking soda breaks down more efficiently into carbon dioxide. Be careful, though; it reacts to its fullest capacity within a couple of minutes of being incorporated into a batter or dough, so speed is of the essence. Rarely is baking soda used on its own; it is usually combined with baking powder.

baking powder: Single-acting baking powder is a combination of baking soda, cream of tartar (an acid), and cornstarch. The ratio is 1:2:1. "Single-acting" refers to baking powder that contains one acid that dissolves in water and will immediately react with the baking soda. This gives the baker or pastry chef very little time to make the batter or dough and bake it without the baking powder adversely affecting the finished baked product. Single-acting baking powder is not sold anymore, but it is a kind of baking powder that one could make at home. Thankfully, there is double-acting baking powder, which contains two acids (sometimes more). One acid dissolves in the presence of moisture (and therefore reacts with the baking soda), and another acid reacts with heat during baking. There are some baking powders that contain a single acid but are treated so that some of it dissolves in moisture and the rest will dissolve in the presence of heat. This will result in a better finished product.

There are two other types of leavening agents: water and air. Water in the form of steam (see Water, page 6) is considered a physical leavener. Air leavens batters in the form of bubbles trapped in a foam, such as aerated egg whites (or yolks to a lesser extent) in a batter, soufflé, or génoise (sponge cake). Air is known as a mechanical leavener, since air is produced by mechanical means, such as a whip or an electric mixer.

eggs

While one could spend a good amount of time studying to understand all of the properties that eggs have, only those that are relevant to this book are discussed here, and even then only briefly. These are their main functions:

- Aerator: Eggs have the capacity to trap air through foaming, which will have a leavening effect on baked goods. This applies primarily to egg whites, but egg yolks can be foamed as well to a lesser extent.

- Integral part of the structure of baked goods: Structure occurs when the egg proteins coagulate in the batter or dough after coming in contact with heat. This occurs in custards and some dessert preparations as well.
- Flavor: Eggs carry a distinctive flavor depending on the preparation. A scrambled egg doesn't have the same flavor as the egg inside brioche, for example. If the brioche didn't contain eggs, besides its appearance being off, the flavor would be noticeably different.
- Emulsifier (especially egg yolks): Eggs have a direct effect on binding the ingredients in a batter or dough, which affects not only texture but flavor as well. For blended batters such as muffins (see page 89), it is especially important to have a proper emulsion.
- Color: Eggs add color not just as an egg wash for baked items but in the dough or batter itself, which browns while baking. This browning is called a Maillard reaction (or Maillard browning), which should not be confused with caramelization. Caramelization is exclusive to sugar, while Maillard is the caramelization of sugar in the presence of a protein.
- Add nutritional value: Eggs contain proteins and vitamins.

flour

The main purpose of flour is to provide the structure or body (along with eggs) in a dough or batter. Gluten (a protein) is mostly responsible for the structure of a dough or batter, but flour in itself does not contain gluten. It contains glutenin and gliadin (both proteins), which together will produce gluten when they come in contact with water and during the mixing process. The longer a dough mixes, the more gluten will develop in a given dough or batter. While gluten development is desired in certain doughs, like brioche, it is not needed in batters, like muffins. For example, a bread, which will usually require medium to full gluten development, needs the strength that results from gluten formation in order to form a firm structure throughout the dough. For items that are more delicate, like muffins, if they are overmixed, they will become tough.

Different varieties of flour will have different percentages of protein. Flour also contributes to flavor (see yeast on page 2), and in conjunction with sugar produces color through the Maillard browning mentioned above, and absorbs liquids, which helps bind all of the ingredients together in a dough or batter. Flour provides some nutritional value, especially whole wheat varieties, but to a much lesser extent when compared to dairy and eggs.

The following is a list of the types of flours that are used in this book, along with the average protein content for each.

- High-gluten flour: 13.5 to 14.5 percent protein
- White whole wheat flour: 13 to 14 percent protein (used for sourdough)
- Bread flour: 11 to 13.5 percent protein (used for viennoiserie, sourdough in combination with white whole wheat flour, and lean dough breads)
- All-purpose flour: 9 to 10.5 percent protein (used for batters and dough). All-purpose flour can be made by combining 70 percent bread flour with 30 percent cake flour (by weight, not by volume).
- Cake flour: 7 to 8 percent protein (used for various sponge cakes)
- Pastry flour: 8 to 9 percent protein (used for muffins)

The recipes in this book use malted flour. There are some flours, most of them organic, that are not malted. Always check the specs of the flour; this information should be available from the flour mill. If the flour is not malted, malt syrup can be added to the recipe; it is usually about 1 percent of the total weight of the flour. Malt syrup acts as a tenderizer, but mostly it provides maltose and glucose for moisture retention and yeast growth.

All recipes that contain yeast or a starter in this book (brioche, croissant dough, Danish dough, sourdough, and lean dough breads) are calculated according to what is called the "bakers' percentage." There is a column of percentages in some of the recipes in this chapter, and the total percentages add up to above 100 percent; for example, the brioche recipe on page 10 adds up to 232.25 percent. The basic principle is that the flour amount (usually bread flour) is always 100 percent. To determine the rest of the percentages, simply divide the weight of the other ingredients by the weight of the flour, and multiply that result by 100. In all other recipes, the percentage is determined by the total amount of the recipe (all ingredients). Bakers' percentage is an excellent tool for bakers, and it has many other possibilities than just determining the percentages in a recipe.

butter

If you overwhip heavy cream, two products will form: butter and buttermilk. The solid component is butter and the liquid is buttermilk. Butter is essentially a water-in-fat emulsion, and it is graded according to

the fat percentage it contains. "Premium" butters will contain at least 82 percent fat. (The USDA allows rounding numbers up to the closest whole number, so butter with 81.6 percent fat will be considered premium, and so will one with 82.5 percent fat, even though there is almost a whole percentage number between them.) Butter will provide flakiness, flavor, moisture, and volume, and it acts as a tenderizer in baked goods. It "softens" a baked product by interfering with the structure formation achieved by the flour and eggs. Butter fat will coat the gluten strands, reducing gluten development since glutenin and gliadin will not be able to come in contact with the water. Remember that water is partially responsible for gluten development. So instead of having long gluten strands, the dough will have shorter strands, which means the product has been tenderized.

salt

The main function of salt is flavor enhancement, but when it is used in a dough that contains yeast of any variety, it will help to control and slow down fermentation. Other functions include increased color of crust and strengthening of gluten bonds, which makes the dough more uniform. If there is too much salt in a dough, it will slow down yeast growth and cause the dough to proof more slowly.

sugar

The most important purpose of sugar is to sweeten, but it also has other contributions to baked goods. In yeasted doughs, it promotes or speeds up fermentation, since sugar is the food yeast uses to ferment. It also acts as a tenderizer since, like butter, it interferes but doesn't prevent gluten strand formation by delaying the formation of structure. The more sugar is in a dough or batter, the more tender it will be. However, too much sugar will overtenderize the dough, making it a spongy, soft mess; additionally, if the dough contains yeast, it will also grow too quickly. Sugar will also contribute to color by browning easily in conjunction with the flour proteins (Maillard browning). In foamed sponge cakes, it will assist in stabilizing the egg foam by slowing the unfolding of the egg proteins, which will prevent the overwhipping of egg foams, especially egg white foams. It also stabilizes the foam because as the sugar comes in contact with the moisture found in eggs, it will dissolve, and this liquid sugar will help trap and support air bubbles.

liquids

WATER

Water serves to hydrate a dough (it is not used frequently in batters), which means it will moisten the glutenin and gliadin to promote the formation of gluten. It helps dissolve solids, such as sugar and salt, in doughs and batters, and it also contributes to the activation of chemical leaveners by dissolving them. It hydrates fresh yeast, thereby allowing fermentation to happen. Water will affect the consistency of a dough (too much will make the dough too loose). It produces steam when it comes in contact with heat, which contributes to crumb formation and the expansion of a dough. For this reason it is also known as a physical leavener. The clearest example of its role as a physical leavener is in pâte à choux, which expands so much because of its high water content that it becomes virtually a hollow shell when baked. Water helps with crust formation in breads (and some viennoiserie such as croissants and Danish), as it evaporates from the surface of the dough when the vent is opened in an oven, drying out the surface and forming a hard shell.

MILK

Milk contains a type of sugar called lactose. When lactose comes in contact with gluten, it will produce Maillard browning on the crust of the dough as it bakes, which will make the crust darker than when water is used in a dough or batter. This crust will also be softer than if water had been used, since milk proteins absorb water, which will slow down its evaporation from the dough's surface. All of the above properties of water are the same for milk, but milk is used primarily for enriched dough, such as brioche, croissant, and Danish. An enriched dough is a dough that contains one or more of the following ingredients: milk instead of water, butter (or other fats), and eggs. All of these ingredients contain a proportion of fat. They differ from lean dough (see page 109) in that lean dough will contain no fat at all, hence the name.

HEAVY CREAM

Heavy cream is obtained from milk and contains 35 to 40 percent fat. It is used mostly for quick breads, such as biscuits and scones, because it contains not only moisture but fat as well. This will result in a homogeneous dough that is not too wet. If an equal amount of milk or water is substituted for heavy cream, it would result in a "wet" dough. The dough can retain the moisture from the heavy cream without it feeling too wet because of its high fat content.

choosing the right butter

NOT ALL BUTTERS ARE MADE THE SAME WAY. The basic steps are as follows: Milk is poured into a machine known as a separator. The cream rises to the top and is skimmed off and then pasteurized. Some manufacturers let it sit overnight to stabilize the fat globules, which will control the crystallization of fat, which in turn will determine the consistency of the butter. What remains in the separator is skim milk. Once the heavy cream has been pasteurized and the fat globules have stabilized, it is transferred to a churn, where it spends anywhere from thirty minutes to an hour, depending on how quickly or slowly the moisture separates from the milk solids. In the churn, the solids are separated from the liquid, which is known as buttermilk. The churn agitates the cream to the point where the fat globules bind to each other, squeezing the moisture out. The resulting butter is then mixed to form the finished product.

Some butters are more elastic than others, meaning they can be stretched to a certain extent before they crack. This quality is called plasticity and is not to be confused with spreading ability, which is how easily it can be spread on, say, a piece of bread. The relative amounts of fat molecules with a high melting point found in a particular butter will determine how hard or soft the butter will be. Soft butter has a high content of crystallized low-temperature-melting fat molecules, while harder butter has a high content of high-temperature-melting fat molecules. The size of the fat crystals depends on how quickly the heavy cream was cooled down after pasteurization. The faster it is cooled down, the smaller the fat crystals will be, and therefore the butter will be softer. The slower it cools down, the larger the fat crystals will be, and therefore the butter will be firmer. The balance between the sizes of both types of fat crystals is what makes the difference between one type of butter and another. The proportion of both types of fat crystals can differ from maker to maker, and it is not necessarily a determining factor in the quality of the butter. It has to do with how quickly the cream is cooled down after pasteurization, before it is churned. Butter plasticity is a prized quality for the lamination process because the butter will be easier to roll out without it cracking. You can get away with the butter being on the colder side, which makes it easier to roll out than when it is soft. It doesn't mean that the butter can be too cold, though, because then it will crack or break no matter how good the plasticity of the butter. For a list of butters with good plasticity for lamination, see Resources, page 540.

BUTTERMILK

Buttermilk is used as an acidic liquid in certain recipes to activate chemical leaveners, and it is also used because its acidity acts as a tenderizer in items such as biscuits. The enzymes in the buttermilk break down flour proteins, making them tender. Buttermilk also contributes a certain flavor. Modern buttermilk production consists of adding lactic acid bacteria to milk; it was originally the liquid that was "squeezed" out of butter after it was churned. Both of these are considered buttermilk, but the latter has a much shorter shelf life.

When weighing any of the recipes in this book, it is fine to round the amounts up to the nearest whole number. All liquids are measured by weight, not volume. It is more efficient to have one type of measuring tool (a scale) than two (a scale and a measuring cup).

The baking (and in some occasions, cooking) times are relative and imprecise. They are only meant to give a general time frame. The most reliable measure to tell when anything is baked or cooked is experience, which can only be acquired through time. All ovens, even those made by the same manufacturer, will be slightly different.

yeast-raised breakfast pastries (viennoiserie)

It is important to know and understand the term *viennoiserie,* since it is truly the origin of all yeast-raised breakfast pastries. This term is used to describe all yeast-raised baked goods that are not bread. They may contain a higher proportion of sugar than bread (they are considered sweet), they are mostly but not exclusively laminated (see the definition of lamination on page 537), and they are typically but not exclusively eaten for breakfast.

As far as the origin of the word itself, it is closely linked to the origin of croissants (see sidebar, page 39), but there is neither solid evidence nor a specific date for when it originated. It is only known that viennoiserie did in fact originate in Vienna, Austria. But viennoiserie as we know it today was influenced by many different countries, such as France, Italy, Germany, Switzerland, Belgium, Denmark, Poland, and, of course, Austria, among other European countries.

There are two major categories of yeast-raised breakfast pastries: those that are leavened by yeast, and those that are leavened by yeast and steam produced by laminating a yeasted dough with butter.

yeast-raised pastries

This refers to breakfast pastries that are leavened exclusively by yeast and are enriched. They contain a proportion of fat given by one or a combination of the following ingredients: milk, eggs, and/or fat (butter). This book will focus on brioche.

BRIOCHE

Brioche is one of the most versatile doughs available. It can be seen as a workhorse dough because it can be used for sweet items as well as savory; it is relatively easy to make, shape, proof, and bake; and it holds well under refrigeration for about two days and frozen as a raw dough for about a week, if it is tightly wrapped.

The mixing method used for brioche is called the "straight" method, which consists of placing all of the ingredients in a bowl and mixing until full gluten development is achieved. Though the ingredients can technically be placed in the bowl in a random order, for best results the ingredients should be placed in the bowl in the following order:

- Liquid: It will be milk in most cases, ideally at 21°C/70°F. If fresh (compressed) yeast is being used, it should be dissolved in this liquid.
- Eggs: They should be at room temperature, or 21°C/70°F, so that they do not bring the temperature of the liquid and, as a result, the dough down to where it is too cold. It is *very important* not to add all of the eggs in the recipe at this point. Withhold 10 to 15 percent of the eggs, and then add those to the dough after the dough has been well mixed and achieved full gluten development. This way the gluten can properly develop before the eggs have a chance to interfere with the process. Since the fat found in yolks will have a similar effect to that of butter, it will coat the proteins in the flour, which will hinder or slow down gluten development.
- Flour: If instant dry yeast is being used, put half of the flour in first, then the yeast, then the rest of the flour.
- Salt: Make sure there are no clumps of salt. Keep it separate from the yeast if scaling ahead of time.
- Sugar: Make sure there are no clumps of sugar. Keep it separate from the yeast if scaling ahead of time.
- Butter: This should be added once the previous ingredients have started mixing and have formed a uniform mass. If butter is added too soon, it will interfere with the hydration of the other ingredients (salt, sugar, flour, instant yeast) and gluten development will take much longer (see "butter" in the ingredients section of this chapter, page 5). The recipe for brioche in this book contains close to 50 percent of the total weight in butter.

A hook is the proper attachment to use for the straight mixing method, since it will mix the ingredients without ripping the dough apart as a paddle would. Always make sure to use an adequately sized bowl for mixing. If the bowl is too small, the dough won't mix well and some of it might come out. If the bowl is too big, it will take too long for the dough to reach gluten development, since the revolution of a large hook takes much longer to complete a full circle than a smaller hook in a small bowl. Be careful that the dough does not exceed 27°C/80°F, since the butter might start melting away from the dough; this can have terrible consequences for the dough, since it can't be fixed at this point.

possible defects of yeast-raised products

defect	cause(s)	solution (the appropriate steps need to be taken beforehand)
Pale crust	Not egg-washed or not egg-washed sufficiently	Make sure to apply the correct amount of egg wash before baking. Once the item has been baked there is no way to fix it.
	Recipe was improperly scaled and has the incorrect amount of sugar or salt	Make sure that all of the ingredients are scaled correctly before making the product.
Thick crust	Overbaked	Have timers available and check the ovens frequently.
Cracked crust	Crust dried out from insufficient egg-washing or there wasn't enough humidity in the proof box	Egg-wash the product as needed during the proofing process (two to three times). Make sure there is enough moisture in the proof box.
Tight crumb	Underproofed*	Bake products when they have achieved adequate proofing. Typically the item should have doubled in size.
Surface looks ripped	Underproofed*	Bake products when they have achieved adequate proofing. Typically the item should have doubled in size.
Crumb is too open (large air pockets)	Overproofed*	When an item is overproofed, it will look deflated.
Surface is not smooth	Dough got too warm from sitting out too long or being excessively handled.	Do not let the dough sit uncovered for long periods of time.
	Warm hands can also damage a dough if they are in contact with the dough for extended periods of time.	Do not overhandle the dough.
Pastry looks deflated	Overproofed*. Excessive fermentation and CO_2 overinflated the pastry with large gas pockets, which deflated during the baking process.	When an item is overproofed, it will look deflated. Bake the item when it is properly proofed.
Pastry smells like alcohol	Overproofed*. Excessive fermentation produced too much alcohol.	Bake the item when it is properly proofed.
Pastry has a ring of egg wash underneath it	Excessive egg wash	Apply just enough egg wash to coat the item to be baked without it pooling down the sides.
Looks flat	Insufficient yeast (improperly weighed-out yeast)	Make sure that all of the ingredients are scaled correctly before making the product.
	Insufficient fermentation	Bake the item when it is properly proofed.
	Oven was at the wrong temperature	Always check the oven before loading it with product.

*Adequate proofing (fermentation) will vary from item to item. In most cases, the product will double in size, but it is not a set rule for all items. Knowing when a dough is proofed requires extensive experience gained through trial and error. Touching the dough to test for proof and having it double in size are two ways to tell if the dough is ready to bake or not.

BRIOCHE "MOTHER" RECIPE

yield: 5 kg/11 lb.3 oz dough

INGREDIENT	METRIC	U.S.	BAKERS' %
Bread flour	2.15 kg	4 lb 12 oz	100%
Salt	56 g	2 oz	2.62%
Sugar	321 g	11.3 oz	14.91%
Instant dry yeast (red label)	26 g	.9 oz	1.2%
Milk, at 21°C/70°F	499 g	1 lb 1.6 oz	23.16%
Eggs, at 21°C/70°F	862 g	1 lb 14.4 oz	40.06%
Butter, diced, pliable but not soft	1.08 kg	2 lb 6.2 oz	50.3%
Total	5 kg	11 lb .3 oz	232.25%

1. Combine the flour, salt, sugar, and yeast.

2. In a 20-qt mixing bowl, pour in the milk and 750 g/1 lb 11 oz of the eggs and stir to combine. Pour the dry ingredients on top. Mix on low speed until just incorporated.

3. Add one-third of the butter and switch the mixer to medium speed. Once that butter has been incorporated, add another third of the butter. Wait until it has been completely mixed in, then add the remaining butter.

Basic Method for Making Brioche Dough

FROM LEFT TO RIGHT:

1. After incorporating the butter, the dough will show minimal gluten development.
2. Midway through the mixing process, the dough will have developed enough gluten to begin to exhibit elasticity when stretched.
3. Use the window test to determine when the dough has reached full gluten development.

4. Continue to mix on medium speed until full gluten development is achieved. To check for gluten development, perform a "window test." Stretch a small amount of dough with your hands. It should be elastic enough to be pulled until it is very thin and you can see through it without it ripping.

5. Add the remaining eggs and mix until just incorporated. At this point, the final dough temperature should not exceed 27°C/80°F.

6. Take the dough out of the bowl and place on a floured surface. Cover with plastic wrap. Allow it to bulk ferment for 45 minutes.

7. Transfer the dough to a sheet pan lined with silicone paper or greased parchment paper to prevent it from sticking. Wrap the sheet pan with plastic wrap and refrigerate. It is ready to be shaped when it is has firmed up and relaxed for at least an hour. At this point it can be reserved in the refrigerator for 12 hours before shaping, or it can be frozen for later use.

notes Never handle brioche above 27°C/81°F, since this temperature will cause the large amount of butter in the dough to soften and separate from the dough, thereby breaking the emulsion. This will result in a brioche with poor crumb structure and an uneven baking surface (cracked and lumpy rather than smooth). If the bakeshop is too hot, keep the dough as cold as possible (freezing it for short periods of time) and only shape a few pieces at a time. Work as far away from the oven or any other heat source as possible. The temperature 27°C/81°F is only good for proofing; since the dough will not be manipulated (touched) any further, the butter has a chance to slowly expand with the dough as it proofs, and there is no separation. The brioche should be proofed at 27°C/81°F, with a humidity of 65 to 70 percent.

CRAQUELIN

yield: **40 pieces**

INGREDIENT	METRIC	U.S.
Sugar cubes	**80**	**80**
Lemon zest	**6 lemons**	**6 lemons**
Tahitian vanilla powder	**10 g**	**.35 oz**
Brioche Dough (page 10)	**3.64 kg**	**8 lb .4 oz**
Egg Wash for Brushing (page 13)	**as needed**	**as needed**
Sanding sugar	**as needed**	**as needed**

1. Cut the sugar cubes in half and combine them with the lemon zest and vanilla powder in a bowl. Toss until all of the ingredients are uniformly mixed. It is a good idea to prepare this ahead of time. A large amount of this mixture can be made and stored at room temperature in an airtight container for further use. This will also help the sugar cubes absorb the flavors of the lemon zest and vanilla powder.

2. Weigh out forty 63-g/2.25-oz pieces of brioche and refrigerate. Weigh out forty 28-g/1-oz pieces of brioche and refrigerate.

3. Shape the larger pieces of brioche into balls and refrigerate.

4. Roll the smaller pieces of brioche out into 7.5-cm/3-in discs.

5. Place 40 mini panettone cups on a sheet pan.

6. Remove the larger brioche balls from the refrigerator. Push 4 sugar cube halves into each ball, and reshape into a ball.

7. Brush the exposed surface of the brioche discs with egg wash. Place a large brioche ball at the center of each disc.

8. Carefully wrap the larger balls with the brioche discs, making sure that they are completely enclosed.

9. Place each craquelin inside a panettone cup, with the seam resting on the base of the cup. Brush the top of each craquelin with egg wash.

10. Place the sheet pan inside a large plastic bag and tie it shut. Proof at room temperature (21° to 22°C/70° to 72°F) until the craquelin rises to the top of the panettone molds. This can take up to 3 hours; alternatively, proof inside a proof box at 27°C/81°F with 70 percent humidity, until the craquelin reaches the top of the panettone molds, about 1½ hours.

11. Preheat a convection oven to 185°C/365°F.

12. Brush the top of the craquelin with egg wash one more time and sprinkle sanding sugar generously on top, enough to cover the exposed surface. Score the center of the craquelin using a pair of scissors. The score should be about the size of a dime in diameter, and 1.25 cm/.5 in deep.

13. Bake until the craquelin is golden brown on top, about 12 minutes.

Basic Method for Shaping Craquelin

FROM LEFT TO RIGHT:

1. Press the halved sugar cubes into the centers of the larger balls of brioche dough.
2. Gently wrap the brioche balls in discs of dough, ensuring that each ball is completely encased.
3. The abundance of sugar tenderizes the dough and fuels yeast activity, creating a hollow within the finished craquelin's delicate crumb.

note For this particular item, it is very important that it be completely finished the same day that the dough is made, or it will not hold its shape when it bakes. The large amount of sugar in the dough provides plenty of food for yeast development, but don't forget that sugar is also a tenderizer (it can weaken the gluten in the dough). The delicate outer shell of the craquelin needs to withstand the interior expansion of the dough without ripping while it bakes. The dough is strongest when it is recently made. The older it is, the weaker it will become.

variations Use brown sugar cubes instead of white sugar cubes. However, brown sugar cubes can be very expensive.

Any citrus zest will work; add 20g/.70 oz per 5 kg/11 lb .32 oz batch of brioche dough.

Sugar cubes can also be flavored with ground spices such as cinnamon, nutmeg, and cloves; simply toss them with the cubes to coat them.

Cubes can be drizzled with liquor, such as rum or Amaretto, but they need to be placed in an oven to dry them out; otherwise they will dissolve.

Substitute English toffee pieces for the sugar cubes.

EGG WASH FOR BRUSHING

yield: 1 kg/2 lb 3.2 oz

INGREDIENT	METRIC	U.S.	%
Whole eggs	**658 g**	**1 lb 7.2 oz**	**65.79%**
Egg yolks	**263 g**	**9.28 oz**	**26.32%**
Milk	**66 g**	**2.32 oz**	**6.58%**
Salt	**13 g**	**.46 oz**	**1.32%**

Combine all of the ingredients in a bowl using a whisk. Pass through a fine-mesh sieve and pour into an airtight container. Refrigerate. Discard after 3 days.

note This will need to be made in advance, before shaping pastries.

Pearl Sugar Brioche (page 15) on the left and Huckleberry Compote and Lemon Curd Brioche (page 16) in the center.

PEARL SUGAR BRIOCHE

yield: 40 pieces

INGREDIENT	METRIC	U.S.	%
Brioche Dough (page 10)	**2.8 kg**	**6 lb 2.77 oz**	**90.9%**
Egg Wash for Brushing (page 13)	**as needed**	**as needed**	
Pearl sugar, or as needed	**284 g**	**10 oz**	**9.1%**

1. Place 40 fluted paper cup molds (see picture at left) on a sheet pan. Spray lightly with vegetable spray.

2. Divide the brioche into forty 70-g/2.5-oz pieces. Shape each piece into a ball on a lightly floured surface.

3. Preheat a convection oven to 185°C/365°F.

4. Place each ball inside the prepared molds. Make sure they are centered in the mold so that when they bake, they bake upward and not lopsided. Wrap the entire sheet pan and freeze or refrigerate if not using right away, or brush with egg wash and proof at 27°C/81°F with 70 percent humidity for 2 hours or until nearly doubled in size. Brush the brioche with egg wash again. Make sure not to brush the brioche too heavily, since any egg wash that trickles down will puddle and bake. Brush on just enough to coat the surface.

5. Once the brioche has fully proofed, brush with egg wash once again. Sprinkle about 7 g/.25 oz of pearl sugar on top of each brioche. Use more if necessary to coat the entire surface.

6. Bake until golden brown, 10 to 12 minutes. Cool on a wire rack.

BRIOCHE À TÊTE

yield: 40 pieces

INGREDIENT	METRIC	U.S.
Brioche Dough (page 10)	**2.8 kg**	**6 lb 2.75 oz**
Egg Wash for Brushing (page 13)	**as needed**	**as needed**

1. Place 40 fluted tinned-steel brioche molds on a sheet pan. Spray lightly with vegetable spray.

2. Divide the brioche into forty 70-g/2.5-oz pieces. Shape each into a ball on a lightly floured surface and refrigerate covered until firm to the touch.

3. Roll each piece into a cylindrical shape with the palm of your hand on a lightly floured surface. The approximate dimension will be 7.5 cm long by 2.5 cm in diameter/3 by 1 in. Visually divide each piece into thirds and, using your hand as if it were a knife, roll the dough back and forth until it is almost divided into 2 pieces one-third from one end of the cylinder.

4. Lift the dough from the smaller piece and press down into the larger piece of dough in a circular motion; this will form the large rounded base and the smaller rounded top.

5. Place the shaped têtes inside the prepared molds. Make sure they are centered in the molds so that when they bake, they bake upward and not lopsided. Wrap and freeze or refrigerate if not using right away, or brush with egg wash and proof at 27°C/81°F with 70 percent humidity for 2 hours or until nearly doubled in size.

6. Meanwhile, preheat a convection oven to 185°C/365°F.

7. Once the têtes have proofed, brush with egg wash again and bake until golden brown, 10 to 12 minutes. Remove from the molds immediately after they bake, otherwise the steam from the brioche will be trapped and the base of the brioche will collapse.

8. Cool on a wire rack.

HUCKLEBERRY COMPOTE AND LEMON CURD BRIOCHE

yield: 40 pieces

INGREDIENT	METRIC	U.S.	%
LEMON CURD			
Lemon juice	**218 g**	**7.68 oz**	**18.18%**
Sugar	**218 g**	**7.68 oz**	**18.18%**
Eggs	**218 g**	**7.68 oz**	**18.18%**
Butter	**545 g**	**1 lb 3.2 oz**	**45.45%**
HUCKLEBERRY COMPOTE			
Huckleberries (see Note)	**840 g**	**1 lb 13.6 oz**	**70%**
Sugar	**240 g**	**8.45 oz**	**20%**
Water	**120 g**	**4.22 oz**	**10%**
Salt	**pinch**	**pinch**	
Brioche Dough (page 10)	**2.4 kg**	**5 lb 4.66 oz**	**47.06%**
Egg wash for Brushing (page 13)	**as needed**	**as needed**	**1.97%**
Pearl sugar	**200 g**	**7.05 oz**	**3.92%**

1. **FOR THE LEMON CURD:** Combine the lemon juice, sugar, and eggs in a bowl and cook over a double boiler, whisking constantly, until the mixture reaches 80°C/175°F.

2. Remove from the heat and transfer to a mixer bowl fitted with a whip attachment. Whip on high speed, and add the butter in small pieces. Whip until the curd has cooled down.

3. Reserve refrigerated in an airtight container. Place a piece of plastic wrap directly over the surface of the lemon curd to prevent a skin from forming.

4. **FOR THE HUCKLEBERRY COMPOTE:** Combine all of the ingredients in a pot and bring to a slow boil, stirring occasionally. Turn off the heat. Do not boil too quickly or stir aggressively, in order to keep the integrity of the huckleberries as much as possible (they burst easily).

5. Cool the huckleberry compote over an ice bath. Adjust the sweetness by adding more sugar if necessary. Reserve refrigerated in an airtight container.

6. **FOR THE ASSEMBLY:** Remove the brioche from the refrigerator and roll the dough to a thickness of 5 mm/.25 in using a sheeter, preferably, or a rolling pin. Let the dough relax for 30 minutes in the freezer. This will help it hold its shape when cut.

7. Meanwhile, grease forty 113-g/4-oz disposable aluminum soufflé tins or stainless-steel rings 7.5 cm diameter by 3.75 cm high/3 by 1.5 in with nonstick spray. Place them on a sheet pan, with parchment paper if using stainless-steel rings.

8. Cut out brioche circles using a 10-cm-/4-in-diameter ring cutter. If the dough is still cold by the time the last piece is cut out, line the inside of the soufflé tins or the rings with the dough, making sure that the dough is flush with the base of the tin or ring and that it comes up just above the rim. At this point the shaped brioche can be wrapped and refrigerated or frozen. If not, brush the exposed border of the dough with egg wash and proof at 27°C/81°F at 70 percent humidity for about 2 hours or until nearly doubled in size.

9. Meanwhile, preheat a convection oven to 185°C/365°F.

10. Brush the exposed border of the dough with egg wash again and sprinkle a small amount (about 5 g/.18 oz) of pearl sugar around the rim of the brioche.

11. Bake until the brioche is golden brown, 10 to 12 minutes.

12. Take the tins or ring molds off of the sheet pan and cool them on a wire rack.

13. Once they have cooled, push down the center of the dough with your index finger, wearing a glove, to make room for the lemon curd. Pipe 30 g/1.06 oz of lemon curd into the baked brioche, and then spoon 30 g/1.06 oz of huckleberry compote on top of the lemon curd.

14. Tie a ribbon around the finished brioche, and reserve in a cool, dry place for up to 12 hours. Discard any remaining brioche after service.

note Huckleberries usually come with a few stems and leaves. Make sure to pick through them before cooking. This task can be very laborious, but it is necessary.

FOIE GRAS, RAINIER CHERRY, AND SICILIAN PISTACHIO BRIOCHE

yield: 40 pieces

INGREDIENT	METRIC	U.S.	%
Foie gras (Grade A duck), cleaned	**1.2 kg**	**2 lb 10.32 oz**	**23.53%**
POACHED RAINIER CHERRIES			
Rainier cherries, stemmed and pitted	**1.4 kg**	**3 lb 1.28 oz**	**44.4%**
Sugar	**750 g**	**1 lb 10.4 oz**	**23.79%**
Water	**1 kg**	**2 lb 3.2 oz**	**31.72%**
Salt	**3 g**	**.11 oz**	**.10%**
Madagascar vanilla pods, split and seeds scraped	**4**	**4**	
TOASTED SICILIAN PISTACHIOS			
Sicilian pistachios	**203 g**	**7.15 oz**	**100%**
Brioche Dough (page 10)	**2.4 kg**	**5 lb 4.66 oz**	**47.06%**
Egg Wash for Brushing (page 13)	**as needed**	**as needed**	**1.97%**

1. Place the foie gras in a Thermomix cup. Press the 60°C/140°F button, turn the speed dial to speed 6, let it run for 2 minutes, and then turn the speed to 10 for 10 seconds. Transfer the foie gras to a bowl because the carryover heat in the cup might melt the foie gras.

2. Transfer the foie gras to a piping bag. Pipe it into 28-g/1-oz muffin fleximolds, smoothing out the tops with a small offset spatula. The shape of the muffin is ideal for the foie gras, since it will be placed inside the brioche.

3. Freeze the foie gras until hardened. Unmold and reserve frozen in an airtight container.

4. **FOR THE POACHED RAINIER CHERRIES:** Place all of the ingredients in a 6-qt sauce pot and bring to a boil over high heat. Turn the heat down to low and cook for 20 minutes, or until the cherries are tender. Skim the surface of the pot while the cherries are cooking.

5. Take the pot off the heat and transfer the contents to a hotel pan. Remove the vanilla pods. Let them cool at room temperature, then transfer to an airtight container and refrigerate.

6. **FOR THE TOASTED SICILIAN PISTACHIOS:** Preheat a convection oven to 162°C/320°F. Line a half sheet pan with parchment paper.

7. Chop the pistachios coarsely by hand and place on the sheet pan.

8. Toast until you can smell the pistachios (smelling them from the oven is a good gauge to determine if they are done). They will lose some weight due to evaporation while toasting.

9. Cool on a speed rack and transfer to an airtight container. The toasted nuts will keep for 5 to 7 days at room temperature.

10. **FOR THE ASSEMBLY:** Take the brioche out of the refrigerator and roll the dough to a thickness of 5 mm/.25 in using a sheeter or a rolling pin. Let the dough relax for 30 minutes in the freezer. This will help it hold its shape when it is cut out.

11. Place 40 mini panettone paper baking cups on a full-size sheet pan. Cut out brioche circles using a 12.5-cm-/5-in-diameter ring cutter. If the dough is still cold by the time the last piece is cut out, line the inside of the mini panettone cups, making sure that the dough is flush with the

base of the cup and that it comes up just above the rim. At this point the shaped brioche can be wrapped and refrigerated or frozen. Or brush the exposed border of the dough with egg wash and proof at 27°C/81°F at 70 percent humidity for about 2 hours or until nearly doubled in size.

12. Meanwhile, preheat a convection oven to 185°C/365°F.

13. Brush the exposed border of the dough with egg wash again.

14. Bake for 6 to 7 minutes until the top of the brioche is golden brown. Once the brioche has cooled off, place the foie gras inside it; you may need to make room for it with your fingers. Strain the liquid out of the cherries and reserve for another use. Spoon 28 g/1 oz of poached cherries onto the foie gras and top with 5 g/.18 oz of toasted Sicilian pistachios. Optionally, tie a ribbon around the finished brioche. Reserve in a cool, dry place for up to 12 hours. Discard any remaining brioche after service.

note Even though the cherries will start out at a larger amount than the final weight needed, they will lose volume due to evaporation, even with the addition of sugar. The final yield is the weight of the cherries once they are cooked and drained from their poaching liquid.

DOUGHNUTS

yield: 40 pieces

INGREDIENT	METRIC	U.S.
Brioche Dough (page 10)	**3.2 kg**	**7 lb .64 oz**

1. Roll out the cold brioche dough to a thickness of 2 cm/.75 in using a rolling pin or, preferably, a sheeter for consistency. Let the dough relax for 30 minutes in the freezer. If the dough is cut before this time, the gluten will pull back too quickly and will result in oval doughnuts.

2. Flour the work surface (preferably wood) lightly with bread flour. Line 4 sheet pans with parchment paper and spray the paper with nonstick oil spray.

3. Place the chilled dough on top of the floured surface and lightly dust flour over the exposed surface of the dough. Dip a 7.5-cm-/3-in-diameter doughnut cutter (or use larger or smaller cutters, as desired) in bread flour and cut into the dough, making sure the cutter goes straight down and is not lopsided. Do not twist the cutter, since this will affect the shape of the doughnut as well. If the doughnut did not come out clean, the cutter needs more flour.

4. Place the cut doughnuts on the prepared sheet pans. There should be 12 to 15 pieces per sheet pan.

5. Proof at 27°C/81°F with 70 percent humidity for 2 to 3 hours, or until almost doubled in size. You can tell they are proofed by gently pressing down with your finger. If the dough springs back, it is ready to fry.

6. While the doughnuts proof, heat a fryer to 182°C/355°F, or bring oil up to that temperature in a large rondeau.

7. When the doughnuts are ready to fry, line 2 sheet pans with a wire rack and have a spider ready to turn the doughnuts around in the fryer and to spoon them out. Gently lift the parchment paper under a doughnut and place the doughnut on the palm of your hand, then carefully drop it into the hot oil. This is another way to prevent the doughnut from becoming misshapen, since pulling on any part of it will make it lose its "O" shape.

8. Add 4 or 5 more doughnuts to the fryer. Once the doughnut gets a golden brown color on one side, flip it over and fry until golden on the other side, about 3 minutes per side. If you are also frying the doughnut centers, you must move them around in the oil constantly with a spoon, since they won't turn on one side or the other because they are round. Moving them constantly will give them an even color. The trick is to get the doughnut to be the same color on both sides, and for all the doughnuts to be the same color as well. Practice makes perfect.

9. Place the fried doughnuts on the wire racks to cool.

notes You can reserve the doughnut centers, fry them, and finish them as you would the actual doughnuts, but with less frying time since they are considerably smaller. These can be given out as samples or used to actually finish the doughnuts by placing them in the center of the finished doughnut, as with the Meyer Lemon Doughnuts on page 23.

It is desirable to have a white ring around the doughnut. This is a sign of proper proofing and frying. Some mass-produced doughnuts are uniformly browned throughout, and it is because they are fried in conveyor-belt type fryers that completely submerge the doughnut in hot oil for quicker frying.

Although there are variations on the dough used to make doughnuts, brioche is preferred because it produces a very delicate and light doughnut when it is fried. As commonplace as doughnuts are, it takes only a little more effort and a few extra steps to make them special. The preferred oil for frying doughnuts (or anything in this book, for that matter) is peanut oil, but there are two factors to consider with peanut oil. The first, and perhaps not as important as the second, is the cost factor. Peanut oil is expensive. The second factor is that there are many people with nut allergies. The second-best oil to use is straight canola oil. Never use shortening or lard.

FOR GLAZING DOUGHNUTS WITH POURING FONDANT

This procedure will apply to any item that uses pouring fondant to glaze, and this includes doughnuts, éclairs, and religieuses. Each variety will have specifics, such as a particular flavor or color or garnish, but all of the principles for working correctly with fondant are described in this section.

Place the fondant in a bowl and soften it using a hot water bath while stirring with a rubber spatula. Better yet, use a wooden spoon, but never a whisk. It can be hard to stir the fondant since it is very stiff when it is at room temperature. To help with this, add a small amount of simple syrup or water (about 100 g/3.53 oz for each 1 kg/2 lb 3.2 oz of fondant). Some chefs prefer to add water in order not to increase sweetness of the glaze, since fondant is already very sweet, but simple syrup and corn syrup can improve the shine of the glaze. This simple syrup should be made by boiling equal parts (by weight) of sugar and water. Make sure it is at room temperature when adding it to the fondant. One of the most important things to know about glazing an item with fondant is that it should warmed to between 35° and 40°C/95° and 105°F to obtain the shiniest glaze.

Fondant is made by boiling sugar and glucose syrup in order to concentrate it. It is then cooled down through agitation, which will result in very fine sugar crystals with delicate bonds that stay aligned a certain way. When fondant gets too hot, the bonds separate, and they give the glaze the impression of being bloomed (cracked and dull). It is for this reason that the water in the hot water bath should never boil, nor should the simple syrup or chocolate be added when they are hot, since this could bring the temperature of the fondant above 40°C/105°F. If making chocolate fondant glaze, when the fondant is fluid, add the melted but cool chocolate and stir until a uniform mixture is obtained.

The second most important aspect of glazing is getting the fondant to the right consistency. The final consistency should be semifluid. If it is too firm, it will not glaze the doughnut smoothly and evenly, and it will have ripples and spikes. If it is too loose, it will drip down the sides of the item. To fix these problems, if the glaze is too thick, add some simple syrup, and then measure the temperature again. Since the simple syrup is at room temperature, it will drop the temperature of the glaze. Warm the fondant over a water bath if necessary. If it is too loose, add more fondant (which will lighten the color of the glaze) or more chocolate (which will make it dull). Ideally, add a small amount of both, check the temperature, and reheat the glaze if necessary.

Remember that while you are glazing, the temperature of the glaze will drop. Check the temperature frequently and always have a hot water bath going to reheat the glaze when needed.

It is always nice to obtain an even coat of glaze on an item, a practically perfect straight line across it, but sometimes there will be a runaway drop going down the side of the doughnut. You can always use your finger to wipe it off, but make sure you are wearing gloves.

MEYER LEMON DOUGHNUTS

yield: **40 pieces**

INGREDIENT	METRIC	U.S.
MEYER LEMON GLAZE		
Pouring fondant	**1.33 kg**	**2 lb 14.88 oz**
Meyer lemon juice	**667 g**	**1 lb 7.52 oz**
Brioche Doughnuts (page 21)	**40**	**40**
Brioche Doughnut Centers, fried (page 21)	**40**	**40**
Silver dragées	**40**	**40**

1. **FOR THE MEYER LEMON GLAZE:** Follow the instructions for glazing with fondant on page 22. Adjust the consistency of the glaze by adding more juice to loosen the glaze or more fondant to thicken it, if necessary. This glaze can be piped on instead of dipped for a "dripping" look (see photo).

2. **FOR THE ASSEMBLY:** Dip a doughnut horizontally into the glaze until it almost reaches its midsection, about one-third of the way. For the centers, dip them in the same glaze. The glaze will need to be reheated at this point.

3. Put a silver dragée on top of the freshly glazed centers before the glaze sets; otherwise it will not adhere. Place the finished centers in the hole in the center of the finished doughnuts.

4. Display for 16 hours maximum. Discard any left over after this period of time.

note There will be some leftover glaze, but it is necessary to make more than will actually coat the doughnuts. The doughnuts need to be dipped in a certain volume of glaze so that it can completely surround the doughnuts' surface.

Meyer Lemon Doughnuts

CHOCOLATE-GLAZED AND COCONUT DOUGHNUTS

yield: 40 pieces

INGREDIENT	METRIC	U.S.
CHOCOLATE GLAZE		
Pouring fondant	**1.21 kg**	**2 lb 10.72 oz**
Dark chocolate (64%), melted but cool	**606 g**	**1 lb 5.28 oz**
Simple syrup, water, or corn syrup	**182 g**	**6.4 oz**
Brioche Doughnuts (page 21)	**40**	**40**
Shredded coconut	**500 g**	**1 lb 1.63 oz**
Gold leaf	**1 sheet**	**1 sheet**

1. **FOR THE CHOCOLATE FONDANT GLAZE:** Follow the instructions for glazing with fondant on page 22, adding chocolate to the finished fondant.

2. **FOR THE ASSEMBLY:** Dip a doughnut horizontally into the glaze until it almost reaches its midsection, about one-third of the way.

3. Before the glaze sets, sprinkle one-half of the doughnut with shredded coconut and garnish the other half with a small piece of gold leaf. It is a good idea to have 2 people work on this so that one can glaze and another can garnish.

4. Display for 16 hours maximum. Discard any left over after this period of time.

STRAWBERRY SUGAR DOUGHNUTS WITH CRYSTALLIZED BERRIES

yield: 40 pieces

INGREDIENT	METRIC	U.S.
STRAWBERRY SUGAR		
Granulated sugar	900 g	1 lb 15.75 oz
Strawberry powder (see Note)	95 g	3.35 oz
Vanilla powder (see Note)	5 g	.18 oz
CRYSTALLIZED ROSE PETALS		
Rose petals	40	40
Pasteurized egg whites	91 g	3.2 oz
Superfine sugar	909 g	2 lb
CRYSTALLIZED BERRIES		
Freeze-dried raspberries	40	40
Freeze-dried strawberries	40	40
Freeze-dried blueberries	40	40
Egg whites	91 g	3.2 oz
Superfine sugar	909 g	2 lb
Brioche Doughnuts (page 21)	40	40
Brioche Doughnut Centers, fried (page 21)	40	40

1. **FOR THE STRAWBERRY SUGAR:** Combine all of the ingredients thoroughly in a bowl and then pass them through a drum sieve. Reserve in an airtight container at room temperature. The strawberry sugar will keep indefinitely if kept in a cool, dry place.

2. **FOR THE CRYSTALLIZED ROSE PETALS:** Brush each petal lightly with egg whites and then coat them with the superfine sugar. Brush the excess sugar off so that each petal has a uniform coating of sugar. If there is too much egg white, the sugar will clump up on the petal; if there is too little, the sugar will not adhere to the petal.

3. Place the petals on a sheet pan lined with parchment paper. Let them dry for at least 6 hours before using. Once they are dry, transfer to an airtight container and reserve in a cool, dry place. They will keep indefinitely if kept in these conditions.

4. **FOR THE CRYSTALLIZED BERRIES:** Insert the tip of a toothpick into each berry, being careful to not break it. Brush the egg whites onto the berry and then coat it in the superfine sugar. Stick the other end of the toothpick into a piece of Styrofoam (or similar item) to let the berries dry completely.

5. **FOR THE ASSEMBLY:** As soon as the doughnuts and the centers come out of the fryer, they need to be gently tossed in the strawberry sugar. If they are not coated immediately, the sugar will not adhere to the doughnut. Once the doughnuts have cooled, place one brioche center in the hole in the center of each doughnut. One crystallized rose petal should be wedged between the doughnut and the brioche center at an angle. Place one of each crystallized berry between the petal and the brioche centers.

note Strawberry powder and vanilla powder are available through specialty purveyors. See Resources on page 540. See the resource list on page 540 to obtain freeze-dried berries.

CHANTILLY CREAM BRIOCHE BERLINERS WITH ALMOND STREUSEL

yield: 40 pieces

INGREDIENT	METRIC	U.S.
CHANTILLY CREAM		
Heavy cream	**1.8 kg**	**3 lb 15.36 oz**
Superfine sugar	**162 g**	**5.7 oz**
Heavy cream stabilizer (liquid; see Note)	**22 g**	**.76 oz**
Vanilla paste (see Note)	**18 g**	**.63 oz**
AMARETTO ICING		
Confectioners' sugar	**385 g**	**13.54 oz**
Heavy cream	**77 g**	**2.71 oz**
Amaretto	**39 g**	**1.35 oz**
ALMOND STREUSEL		
Almond flour	**249 g**	**8.78 oz**
Pastry flour	**249 g**	**8.78 oz**
Sugar	**249 g**	**8.78 oz**
Butter	**249 g**	**8.78 oz**
Salt	**3 g**	**.09 oz**
FRIED BERLINERS		
Brioche Dough (page 10)	**3.2 kg**	**7 lb .64 oz**

1. **FOR THE CHANTILLY CREAM:** Combine all of the ingredients in a mixer bowl. Using the whip attachment, whip the mixture until it almost reaches stiff peaks. Completely stiff heavy cream does not pipe very smoothly.

2. Reserve refrigerated in an airtight container. The cream will keep for 3 to 4 days in the refrigerator, but it will need to be rewhipped it every day.

3. **FOR THE AMARETTO ICING:** Combine all of the ingredients in a bowl and whisk until an even, thick paste forms. Adjust the consistency by adding more confectioners' sugar if it is loose or more liquid if it's too thick.

4. Use the icing right away or transfer it to an airtight container and refrigerate for up to 3 weeks. The very high sugar content prevents it from spoiling.

5. **FOR THE ALMOND STREUSEL:** Combine all of the ingredients in a mixer bowl. Mix on low speed using a paddle attachment until a homogeneous mass is obtained.

6. Pass the streusel through a grid wire rack to obtain evenly sized pieces (this won't work if the streusel is refrigerated). Freeze the streusel until hardened. It can be baked right away or kept frozen for up to 6 months.

7. **TO BAKE THE STREUSEL:** Preheat a convection oven to 160°C/320°F.

8. Spread the streusel onto a parchment paper–lined sheet pan in a single layer. Bake the streusel until golden brown, about 7 minutes.

9. Place the parchment paper on a cooling rack to cool to room temperature. Reserve in an airtight container in a cool, dry place. The baked streusel will hold for up to 1 week.

10. **FOR THE BERLINERS:** Follow the procedure for doughnuts on page 21, but use a plain 8.75-cm/3.5-in ring cutter to cut out the brioche dough instead of a doughnut cutter.

11. Using a Bismarck piping tip (also known as a filling tip because it has a long, thin tube attached to a regular shaped piping tip), make a hole in side of the fried Berliner. Once the Bismarck tip is in, swirl it around to make room for the filling. Fit the Bismarck tip inside a piping tip using a coupler.

12. **FOR THE ASSEMBLY:** Fill the piping bag with just-whipped Chantilly cream.

13. Fill the Berliner until it can hold no more filling (about 50 g/1.76 oz).

14. Spread the Amaretto icing on top of the Berliner using a gloved finger or a rubber spatula, then immediately dip it in the almond streusel. The top of the Berliner should be generously coated with streusel. The icing is only a "glue" to keep the streusel on the Berliner.

notes Superfine sugar is used because it dissolves faster than larger-crystal sugars.

Ideally, only fill as many Berliners as you think you can sell in 2 hours, since it is not a good idea to refrigerate Berliners, and you can refill the case as the day progresses. As long as you have the mise en place, it is easily done. Always let your customers know to consume the Berliners right away or to refrigerate them if they are not planning to eat them in the very near future.

The stabilizer is used to maintain the volume of the whipped heavy cream throughout the day and through temperature changes, since heavy cream only stays whipped when it is at or below 4°C/39°F (without reaching freezing temperatures). Stabilizers are, in fact, natural products, and most of them are derived from sea algae and plants, not chemicals.

Heavy-cream stabilizers can be found in liquid or powdered form, and neither is better than the other. Check the label of the stabilizer to see how much is required for a specific amount of heavy cream (it might be different from the amount used above).

Vanilla paste is precisely that, a semiliquid paste made with pulverized vanilla beans. In cold preparations such as this one, it helps distribute the vanilla beans more evenly than those of an actual vanilla pod, whose beans are clumped up. Never use vanilla extract. Even the more expensive ones will never taste as good as vanilla paste, vanilla powder, or actual vanilla beans.

A Berliner is a disc of dough (in this case brioche) that is fried and then filled. Here we fill the Berliners with Chantilly cream, but they can be filled in many other ways, such as with pastry cream, raspberry jam, or chocolate ganache.

BRIOCHE LOAVES

yield: **2 loaves**

INGREDIENT	METRIC	U.S.
Brioche Dough (page 10)	**1.4 kg**	**3 lb 1.38 oz**
Egg Wash for Brushing (page 13)	**as needed**	**as needed**

1. Grease 2 stainless-steel ring molds 10 cm tall by 15 cm in diameter/4 by 6 in (see Resources, page 540) lightly with nonstick oil spray, and line the inside of them with silicone paper cut to fit inside the ring mold. Place both ring molds on a half sheet pan lined with silicone paper or a nonstick rubber mat.

2. Make the brioche dough. Weigh out two 700-g/1 lb 8.64-oz pieces of brioche. Flour a work surface with bread flour. Roll out each piece to 2.5 cm/1 in thick, trying to keep it as round as possible.

3. Place the garnish at the center of the dough and fold in the ends to encase the desired garnish (see the table on page 30).

4. Roll the dough into a ball and place one inside each mold with the seam facing down, pressing down with your knuckles so that the dough covers the entire bottom surface of the mold. Try not to leave any garnish exposed or protruding through the surface because it might burn when it bakes. Brush the top with egg wash.

5. Proof at 27°C/81°F with 70 percent humidity for 2½ to 3 hours.

6. Meanwhile, preheat a convection oven to 160°C/320°F.

7. Once proofed, brush the top again with egg wash and add any toppings or glazes if required. Score the dough with a pair of scissors, cutting an "X" that is about 5 cm/2 in long straight down the middle of the top.

8. Bake for 16 minutes, and then turn the temperature down to 150°C/300°F. Bake for about 30 more minutes, or until the internal temperature of the dough reaches 95°C/203°F. The brioche loaves can be taken out of the oven if they are slightly under the desired temperature, since there will be carryover heat that will finish the baking process. Some loaves will require to be glazed at this point while they are still hot.

9. Take the ring molds off the baked brioche while they are still hot and let them cool at room temperature over a sheet pan lined with a cooling rack.

10. Finish the loaves with the appropriate garnish. Display in a cool, dry area. Discard after 16 hours.

Praline Brioche (page 31)

brioche loaf variations

The total amount in the brioche loaf recipe is for 2 loaves, each weighing 700 g/1 lb 8.64 oz before baking. They will lose 3 percent of their weight once they have baked and cooled. This weight does not include added garnish, which can add 15 percent to 20 percent to the total weight. All added garnishes should not weigh more than 20 percent of the total weight of the dough to prevent the risk of the dough collapsing from excess added weight. Recipes for garnishes follow.

	internal garnish	amount (for 2 loaves; divide in half for each loaf)	coating/glaze/ other	amount (for 2 loaves; divide in half for each loaf)	special instructions
Dark Chocolate and Toffee Brioche	Dark chocolate pistoles (72%) English Toffee	100 g/3.53 oz 100 g/3.53 oz	Salted Caramel Toasted pecans (chopped) Maldon sea salt	400 g/14.11 oz 150 g/5.3 oz 10 g/.35 oz	Brush the caramel on after the ring mold has been taken off and while the brioche is still warm. Brush it on all the sides and top of the brioche cube. Return to the oven for 5 minutes. Sprinkle 5 g/.18 oz of Maldon sea salt and 75 g/2.64 oz of toasted pecans on top of each brioche. Finish with the appropriate ribbon.
Banana, Brown Sugar, and Macadamia Nut Brioche	Rum-Scented Sugar Cubes Caramelized Bananas	100 g/3.53 oz 100 g/3.53 oz	Rum Icing Candied Macadamia Nuts (chopped)	300 g/10.58 oz 400 g/14.11oz	Once the loaves have cooled, dip the tops of the brioche into the rum icing (it should just coat the top). Coat the icing with 200 g/7.05 oz chopped candied macadamia nuts for each loaf. Finish with the appropriate ribbon.
Luxardo Cherry and Milk Glaze Brioche	Luxardo cherries (see Note)	200 g/7.05 oz	Condensed milk (warmed to 50°C/122°F) Silver leaf (edible)	600 g/1 lb 5.15 oz 2 sheets (1 per brioche)	Take the molds off the brioche while they are hot. Using a thin skewer, make small holes in the brioche throughout the top (about 25 each); place the still-warm brioche on a sheet pan lined with a wire rack and slowly pour the condensed milk over the top using a funnel or ladle. Repeat until all of the condensed milk has been absorbed. Put the brioche on a sheet pan lined with a nonstick rubber mat. Return the brioche to the oven for 7 minutes. Garnish with a sheet of silver leaf (1 per loaf) and finish with the appropriate ribbon.

	internal garnish	amount (for 2 loaves; divide in half for each loaf)	coating/glaze/ other	amount (for 2 loaves; divide in half for each loaf)	special instructions
Blueberry, Almond and Vanilla Brioche	Blueberries (dried) Vanilla beans (Tahitian, split and scraped, beans only; reserve pods for other uses) Toasted chopped almonds	125 g/4.41 oz 2 pods 75 g/2.64 oz	Pearl sugar	200 g/7.05 oz	Apply the pearl sugar after proofing and the second coat of egg wash has been applied. Finish with a ribbon tied across the front.
Chocolate Truffle Brioche	Milk Chocolate Truffles	180 g/6.35 oz About 18 pieces at 10 g/.35 oz each. Use 9 pieces per cube. Place the truffles in a 3x3 grid (per piece of dough) on the flattened dough, and then fold the corners in.	Chocolate Glaze Chocolate Croquant Chocolate-Covered Puffed Rice (see Resources, page 540)	250 g/8.82 oz 4 pc 100 g/3.53 oz	Apply a coat of chocolate glaze instead of the second coat of egg wash (before baking), and then another coat 2 to 3 minutes before it is finished baking (use a pastry brush to apply the glaze). Once they have cooled, garnish with the chocolate croquant and the chocolate-covered puffed rice. Finish with the appropriate ribbon.
Praline Brioche	Praline croquant (see Resources, page 540)	180 g/6.35 oz	Almond Topping Pipe onto brioche once it is proofed. Praline croquant Sprinkle on top of the almond topping to cover the surface.	200/7.05 oz 200/7.05 oz	Finish with a wide brown ribbon tied around the middle of the loaf.

note Luxardo cherries are marasca cherries, used to make maraschino liqueur. This particular brand (made in Italy) is of exceptional quality.

garnish recipes

Many of these recipes are simpler if made in larger batches because it is easier to prepare them, take their temperature, etc. Such recipes note whether or not they will keep well if stored.

ENGLISH TOFFEE

yield: 100 g/3.53 oz

INGREDIENT	METRIC	U.S.	%
Butter, salted	34 g	1.19 oz	33.68%
Sugar	57 g	2.01 oz	57.03%
Water	9 g	.33 oz	9.28%

1. Line a half sheet pan with a nonstick rubber mat.

2. Combine all of the ingredients in a sauce pot and cook over medium-high heat until the mixture reaches 152°C/305°F. Immediately pour onto the prepared sheet pan. Let it cool, and then break into small pieces using the back of a chef's knife.

3. Place inside a zip-close bag or an airtight container and reserve in a cool, dry place. The toffee will keep indefinitely if stored this way.

RUM-SCENTED SUGAR CUBES

yield: 100 g/3.53 oz

INGREDIENT	METRIC	U.S.	%
Brown sugar cubes	95 g	3.34 oz	95%
Dark rum	5 g	.18 oz	5%

1. Place the sugar cubes on a sheet pan lined with a nonstick rubber mat in a single layer and touching each other. Sprinkle the rum on top of the sugar cubes. Dry on top of an oven, uncovered, or in a dehydrator overnight. If too much rum is used, the sugar cubes will melt and lose their shape.

2. Once they are dry again, transfer to an airtight container and reserve in a cool, dry place. The sugar cubes will keep indefinitely if stored this way.

RUM ICING

yield: 300 g/10.58 oz

INGREDIENT	METRIC	U.S.	%
Confectioners' sugar	231 g	8.12 oz	76.92%
Heavy cream	46 g	1.62 oz	15.38%
Dark rum	23 g	.81 oz	7.69%

Combine all of the ingredients in a bowl and whisk until an even, thick paste forms. Adjust the consistency by adding more confectioners' sugar if it is loose or more liquid if it is too thick.

SALTED CARAMEL

yield: 400 g/14.11oz

INGREDIENT	METRIC	U.S.	%
Sugar	162 g	5.7 oz	40.46%
Glucose syrup	81 g	2.85 oz	20.23%
Heavy cream	101 g	3.56 oz	25.28%
Butter	51 g	1.78 oz	12.64%
Salt	6 g	.20 oz	1.39%

1. In a 2-qt sauce pot, combine the sugar with enough water to obtain a "wet sand" texture (about one-quarter of the weight of the sugar), using your hands. Pour in the glucose. Clean the sides of the pot so that there are no sugar crystals on it by using a clean pastry brush dipped in water. Cook over high heat.

2. While the sugar cooks, bring the cream, butter, and salt to a simmer in a small sauce pot.

3. Once the sugar reaches a dark amber color (170°C/338°F), slowly whisk in the hot cream and butter mixture.

4. Pour the caramel into an adequately sized stainless-steel container and cool at room temperature. Once cool, transfer to an airtight container and reserve in a cool, dry place. The caramel will keep indefinitely if stored this way.

CARAMELIZED BANANAS

yield: 100 g/3.53 oz

INGREDIENT	METRIC	U.S.	%
Bananas	150 g	5.28 oz	50%
Sugar	100 g	3.53 oz	33.33%
Butter	50 g	1.76 oz	16.67%

1. Cut the bananas into 5-mm-/.25-in-thick discs.

2. In a small sauté pan, make a dry caramel with the sugar over high heat, stirring constantly with a spoon. Once the sugar turns a medium amber brown, stir in the butter.

3. When the sugar starts bubbling again, turn the heat down to low and add the bananas. When the side that faces the sugar has been caramelized, turn the discs over and cook until they are caramelized as well.

4. Spoon the bananas out of the caramel and place them onto a sheet pan lined with silicone paper. Place the sheet pan in the freezer, since the caramelized banana discs need to be frozen hard when they are mixed into the brioche to prevent them from breaking up too much.

note Even though the total weight of the ingredients is larger than the yield, we will only be using the drained mass—in other words, only the bananas, which will lose a large amount of moisture during the cooking process.

CANDIED MACADAMIA NUTS

yield: 400 g/14.11 oz

INGREDIENT	METRIC	U.S.	%
Whole macadamia nuts	209 g	7.35 oz	52.17%
Sugar	139 g	4.9 oz	34.78%
Water	52 g	1.84 oz	13.04%

1. Preheat a convection oven to 160°C/325°F.

2. Grease a marble surface with a small amount of nonstick oil spray.

3. Line a sheet pan with parchment paper and a wire rack. Grease the wire rack with nonstick oil spray.

4. Combine the sugar and water in a small sauce pot and cook over high heat. Meanwhile, toast the macadamia nuts in the oven. The trick is to coordinate the cooking of the sugar with the toasting of the nuts. The sugar should be started first since it takes longer to cook than the macadamia nuts do to toast, but with such small amounts it will take practically the same time. If per chance the nuts are toasted before the sugar is caramelized, leave them on top of the oven to keep them warm. The intention is that when they are stirred into the sugar they are not cold, because if they are, they will bring the temperature of the sugar down so drastically that it will crystallize.

5. Cook the sugar to 170°C/338°F. When making small amounts such as this, it is best to tell the temperature by the color of the sugar, since a thermometer probe is too big to submerge into the boiling sugar and will therefore not provide an accurate reading. You could also make more than you need for 1 batch. The color of the cooked sugar syrup should be amber brown.

6. Remove the syrup from the heat and stir in the macadamia nuts. Continue to stir until the macadamia nuts are completely coated in sugar.

7. Pour the macadamia nuts onto the greased wire rack. The parchment paper below the wire rack will catch the caramelized sugar and make cleanup easier.

8. Put on 3 gloves per hand. Spray each hand with nonstick oil spray. Separate the slivered macadamia nuts and place them on the greased marble surface to cool.

9. Once the macadamia nuts have cooled down, chop them coarsely with a chef's knife. Reserve them in an airtight container at room temperature in a cool, dry place. The nuts will keep for up to 2 weeks if stored in these conditions.

CHOCOLATE GLAZE

yield: 250 g/8.82 oz

INGREDIENT	METRIC	U.S.	%
Almond flour	47 g	1.65 oz	18.77%
Cocoa powder	7 g	.24 oz	2.68%
Sugar	134 g	4.72 oz	53.62%
Cornstarch	5 g	.19 oz	2.14%
Egg whites	57 g	2.01 oz	22.79%

1. Combine the flour, cocoa, sugar, and cornstarch in a Robot Coupe and grind for about 1 minute (to obtain a homogeneous mixture).

2. Slowly pour in the egg whites through the top of the Robot Coupe while it is running. Turn the Robot Coupe off as soon as all of the whites have been incorporated.

3. Reserve in an airtight container in the refrigerator. This glaze will keep for up to 1 week.

MILK CHOCOLATE TRUFFLES

yield: **18 truffles**

INGREDIENT	METRIC	U.S.	%
GANACHE (TRUFFLE FILLING)			
Milk chocolate	**424 g**	**14.93 oz**	**56.54%**
Sugar	**27 g**	**.93 oz**	**3.53%**
Pectin, universal (see Note)	**11 g**	**.37 oz**	**1.41%**
Heavy cream	**265 g**	**9.33 oz**	**35.34%**
Glucose syrup	**24 g**	**.84 oz**	**3.18%**
Truffle shells	**18**	**18**	
Tempered dark chocolate (64%)	**100 g**	**3.53 oz**	

1. **FOR THE GANACHE:** Place the chocolate in a medium-small stainless-steel bowl, anchored down with a damp towel to keep it in place.

2. Combine the sugar with the pectin in another small bowl; make sure they are uniformly combined, or else the pectin will clump up on contact with the cream.

3. Place the cream in a small sauce pot over medium heat. When the cream reaches room temperature, stir in the sugar-pectin mix. Whisk in the glucose syrup. Bring the mixture to a boil and pour it over the milk chocolate in a slow, steady stream, stirring constantly with a rubber spatula.

4. Let the mixture cool to room temperature in a shallow hotel pan.

5. **FOR THE ASSEMBLY:** Transfer the ganache to a piping bag and fill the truffle shells to the top. Let the ganache set at room temperature, at least 2 to 3 hours.

6. Coat the truffles in tempered dark chocolate. Reserve them in an airtight container at room temperature in a cool, dry place. They will keep for 1 week if stored this way.

note It is crucial to use universal pectin, also known as NH95 pectin (see Resources, page 540), since regular pectin gels in the presence of sugar, liquid, and an acid. Since there is no acid here to gel the pectin, universal pectin is required because it gels in presence of the liquid and calcium found in the heavy cream and milk chocolate. We add pectin to this ganache because it will stabilize it while it is baking and will prevent ingredient separation. Another notable quality of universal pectin is its "thermoreversible" gelling properties. Once it has gelled, it can be melted and softened again through heat, unlike regular pectin. Regular pectin has irreversible gelling; once it gels it cannot be melted again.

CHOCOLATE CROQUANT

yield: 2 large pieces or 4 small pieces (500 g/1 lb 1.6 oz)

INGREDIENT	METRIC	U.S.	%
Sugar	204 g	7.18 oz	40.82%
Glucose syrup	204 g	7.18 oz	40.82%
Cocoa paste	92 g	3.23 oz	18.37%

1. Line a sheet pan with a nonstick rubber mat and set aside.

2. In a 2-qt sauce pot, combine the sugar with enough water so that it feels like "wet sand" (about one-quarter of the weight of sugar), then pour the glucose syrup on top. Do not stir, mix, or agitate in any way after this point. Place a thermometer in the pot.

3. Cook the mixture until the sugars reach 163°C/325°F, then shock the pot in a cold water bath for 20 seconds to keep the sugar from cooking any further. Stir in the cocoa paste with a wooden spoon and pour onto the prepared sheet pan.

4. When the sugar is pliable, start pulling it. Pull until the sugar is paper thin and you can see through it. The end product will have very abstract shapes, but the pieces should be somewhat similar in look and size. The most important factor is that they be very thin so that they are easy to eat. If the sugar is too hot to handle, put on 2 or 3 pairs of latex gloves, and lightly spray the gloves with nonstick oil spray. If the sugar is too hot, you will not be able to stretch it properly. An ideal temperature is around 50°C/122°F; you can take the temperature with a surface (infrared) thermometer. If the sugar hardens and is not pliable any more, microwave it in 4-second intervals.

5. Keep the croquant in an airtight container at room temperature in a cool, dry place. With cooked sugar pieces, use silica gel packs (see Resources, page 540), which absorb moisture in the environment, keeping the sugar pieces dry. They will keep indefinitely if stored this way.

ALMOND TOPPING

yield: 200 g/7.05 oz

INGREDIENT	METRIC	U.S.	%
Sugar	93 g	3.28 oz	46.51%
Almond flour	53 g	1.87 oz	26.51%
Canola oil	7 g	.26 oz	3.72%
Semolina	4 g	.13 oz	1.86%
Egg whites	43 g	1.51 oz	21.4%

1. Combine all of the ingredients in a bowl. If the mixture is too thick, add some more egg whites.

2. Reserve in an airtight container in the refrigerator for up to 5 days.

note When this topping is baked it becomes very crisp, especially with the addition of the praline croquant, which gives the soft brioche a nice texture balance.

PULLMAN LOAF

yield: **2 loaves**

INGREDIENT	METRIC	U.S.
Brioche Dough (page 10)	**2 kg**	**4 lb 6.54 oz**

1. Divide the dough into two equal 1 kg/2 lb 3.26 oz pieces. Roll out each piece to the length of the Pullman mold (see note below). Let it relax in the refrigerator for 20 to 30 minutes, covered in plastic wrap. Meanwhile, grease the inside of each loaf pan and the lids with a light coating of nonstick oil spray. Roll the dough out to the same length as before and place it inside the loaf pans, flattening them with your knuckles so they occupy the entire base of the pan. Place both pans on a sheet pan.
2. Proof at 27°C/81°F with 70 percent humidity. This can take between 2 and 3 hours.
3. Meanwhile, preheat a convection oven to 190°C/375°F.
4. When the brioche is ready, slide the lid on top of the pan.
5. Bake until the brioche reaches an internal temperature of 95°C/203°F. It can be baked to a few degrees cooler, since there will be some carryover heat that will finish baking the brioche.
6. As soon as the loaves come out of the oven, unmold the brioche onto a wire rack to cool them quickly. If they are left to cool in the pan, they will collapse onto themselves and will not have an even rectangular shape; they will resemble the letter "X" when cut horizontally.
7. Once they have cooled, wrap them tightly in plastic wrap and freeze. They should be frozen in order to obtain a clean, even, straight cut. Always cut with a good serrated knife.

notes A Pullman loaf (also known as pain de mie or sandwich loaf) refers to the mold in which the brioche is baked. This recipe uses a 1-kg pan (known as a 2-lb pan in the U.S.), but there are smaller molds available. This particular mold measures 10 by 40 by 10 cm/4 by 16 by 4 in. It resembles a long rectangle and it has a lid (often sold separately from the pan). The lid keeps the brioche flat on all sides (no crown on top) and creates a tight, compact crumb. This shape is why this loaf is ideal for cutting slices of bread with an even square (or rectangular) shape, with little to no waste. This bread can be used in applications such as the tea sandwiches, pain perdu (similar to French toast), croutons, and bread pudding.

This bread should be cut when it is frozen; this will almost guarantee a clean, straight, even cut with no crumbs falling out. I prefer to cut the crust off for certain sandwich applications and for pain perdu, since it tends to be somewhat dry.

yeast- and steam-raised breakfast pastries (laminated viennoiserie)

These pastries are not only leavened by yeast, but also by steam. This steam comes primarily from butter that is laminated into the dough but also, to a lesser extent, from other moisture like milk and another amount of butter that is mixed into the actual dough. The basic principle of lamination is that very thin layers of dough alternate with very thin layers of butter through a series of specific folds (some call them turns), and it is that butter that produces the steam that leavens the product. The dough basically has the butter "trapped" within itself, in many layers of equal thickness, but the amount of dough layers (81) is larger than the amount of butter layers (78). It is the evenness of these layers and the equal distribution of butter within the dough that will be one of the determining factors of a quality laminated pastry. An example of a steam-raised laminated dough that contains no yeast but is laminated is puff pastry.

These laminated pastries have very different qualities than yeast-raised pastries. Laminated pastries are flaky on the outside, which is a direct result of the butter layers, and light and soft on the inside. There are many signs to look out for in a quality laminated pastry, but the single most valued sign is called the "honeycomb." A laminated pastry honeycomb is a series of irregular cells or air pockets, which have a distinct pattern that is never the same from one item to the other, but when it is done right, they are all similar in principle.

Correct lamination and shaping will result in a perfect honeycomb structure.

The following is a list of the most valuable quality aspects of laminated, yeast-raised pastries:

- Flakiness: The crust of the pastry should easily crumble when gentle pressure is applied, and pieces should flake off, making a crunchy sound. If it doesn't make that sound, it means the pastry is soft, which is a clear sign that something was not done correctly or that the pastry is old. There will be a very fine coating of butter on your fingers when you break through the crust.
- Lightness: The pastry is lighter in weight than it looks; this is because it is not a solid piece of dough, but is full of air cells (the honeycomb).
- Texture contrast: The flaky crust combines with a light, delicate interior.
- Yeasty flavor: Through bulk fermentation and proofing, the dough develops a unique yeasted flavor.

In this book, classic French croissants and pain au chocolat are made with the same dough as Danish pastries. It is important to note that usually pain au chocolat is incorrectly called "chocolate croissant." *Croissant* refers to only one variety of laminated pastry, the croissant, even though other laminated pastries are made with croissant dough.

In this book, Danish distinguishes itself from croissant-dough items with the addition of a garnish, which can be a pipeable filling (jam, cream cheese, or curd), cooked fruit, nut pastes, batters, and so on. Personally, I like to have a 60/40 ratio of dough to garnish (sometimes 70/30); this allows garnish and dough to be eaten together in every bite from beginning to end. This book does not use any "wet" fillings (such as pie filling–style fillings or pastry cream), and most garnish is not added until after the Danish is baked. There is a very simple reason for

this. When the dough is proofed with the garnish, the garnish will weigh the dough down, compromising the proper leavening of the dough since it is too delicate to push most garnishes up. The Danish will usually end up flatter, with little flakiness around the area where the garnish is placed. We will be piping the garnish inside and/or on top of the baked pastry, thus maintaining its flakiness for a longer period of time. In this section are different ways to shape and garnish Danish that greatly increase its shelf life and flakiness. Furthermore, there is a section of Danish titled "Advanced Viennoiserie" on page 62, which is a step up from an already high-quality Danish.

When baked, laminated pastries should have a deep golden brown color, which translates into a flaky product, even once it cools down. When the baked product is pale and yellowish, the pastry will have a soft, bun-like consistency, and all the work that went into making all of those layers is rendered useless.

As seen in the diagram on page 41, there is a dough portion and a butter portion (also known as a butter block), which accounts for over 60 percent of the weight of the flour. This means that for nearly every part of butter there are two parts of dough.

the story behind croissants and lamination

UNFORTUNATELY, THERE IS NO SOLID EVIDENCE that tells us where the croissant as we know it today came from. The shape, however, can be traced to the seventeenth century. It is said that a baker in either Vienna or Budapest working the night shift heard noises coming from underground. The noises turned out to be a group of Turks trying to besiege the city. The baker stopped the attempted invasion by sounding the alarm. He asked for no reward, but he was offered the honor of creating a pastry that would commemorate the occasion. The Turkish flag has a crescent moon on it, so the baker created a pastry in that crescent shape.

According to *The Oxford Companion to Food,* croissants as the flaky, delicate pastry we know today are mentioned for the first time in 1906 in a publication titled *Nouvelle Encyclopedie Culinaire.* This means that the croissant could be just over a hundred years old. However, puff pastry has been around for centuries. The first published mention of puff pastry (or "butter paste") can be traced to 1596 in a book titled *The Good Housewife's Jewel,* by Thomas Dawson. It employed a method similar to the one known today as the "blitz" method for puff pastry. Instead of using a butter block, the dough is dotted with pieces of butter, then folded over to trap the butter, then rolled out again and folded again, for a total of five folds. It is curious that the principle of laminating butter and dough has been around for so long, but that using a yeasted dough took over three centuries to happen. One can actually trace the origins of puff pastry, specifically with the blitz method, to short-crust pastry (a rudimentary form of pie dough). Short-crust pastry is made in much the same way that the cut-in method dough is, in which butter is interspersed through the dough to create pockets of steam and thus produce a flaky pastry. The size of the butter will determine the flakiness of the dough (the smaller it is, the crumblier it will be; the larger it is, the flakier it will be).

the lamination process

FORMATION OF THE BUTTER BLOCK

In order to obtain a rectangle of butter for laminating dough, there are three approaches:

1. Have a frame made that will hold the exact amount of butter needed. For the amount needed in the recipe on page 53, the frame should measure 37.5 by 25.5 by 1.25 cm/14.75 by 10 by .5 in on the interior; the width of the frame should be no more than 2 cm/.75 in thick so that it can fit inside a sheet pan if necessary. Place the frame on top of one side of a sheet of silicone paper. Place the butter inside the frame and spread it out evenly with an offset spatula. Close the other half of the silicone paper on top of the butter and, using a rolling pin, even it out. At this point you can pass the back of a paring knife around the inside of the frame, take the frame off, and make another butter block, or, if you are just doing one frame, close up the silicone paper borders as if you were folding an envelope closed. Refrigerate until ready for further use, or freeze if stocking up on butter blocks. Make sure to place them on a flat surface while they firm up, and don't stack blocks on top of each other if the one directly underneath has not firmed up yet.

   If the butter block is still at 21°C/70°F or slightly colder and the croissant dough is cold, at refrigeration temperature, the lamination can be started right away. Otherwise, chill the butter block completely, and then pull it out of the refrigerator a couple of hours before using it. If you forget to do so (which is a possibility you need to allow for), then take the following steps. Remove the butter block from the refrigerator and microwave it on high power for 10 seconds. Pound it lightly with a French rolling pin (or thick wooden dowel) in even strokes from one direction to the other (left to right, for example), flip the block over, and tap it again in the same way. Reshape the butter block with the rolling pin and with your hands, evening out the borders. If it is still too hard, repeat this process until it reaches the right temperature. If it gets too soft, refrigerate the block again to get it completely cold. The reason for this is that butter will get colder at different rates in different areas of the block, which will give it an uneven consistency. The middle of the block might still be soft while the exterior is already firm.

   The success or failure of lamination partially depends on the dough and butter block being of the same consistency, so that when they are rolled out (or sheeted if using a sheeter) they both extend at the same rate, thus keeping the dough from ripping or the butter from cracking. Even layers will produce the much-coveted honeycomb. The only downside of this frame is that it can be costly. Plexiglas is an adequate material for this frame.

2. Another method for making a butter block if you have no frame is to place the softened butter on one half of a sheet of silicone or parchment paper and close the other half of the paper on top of the butter. Close or seal the open ends of the paper by folding it onto itself (the top half over the bottom half), creating a package. With a rolling pin, flatten the butter into a block, rolling it toward the border of the package, trying to keep an even thickness throughout the block. The disadvantage of this method is difficulty in keeping the thickness consistent, but with practice it can be done.

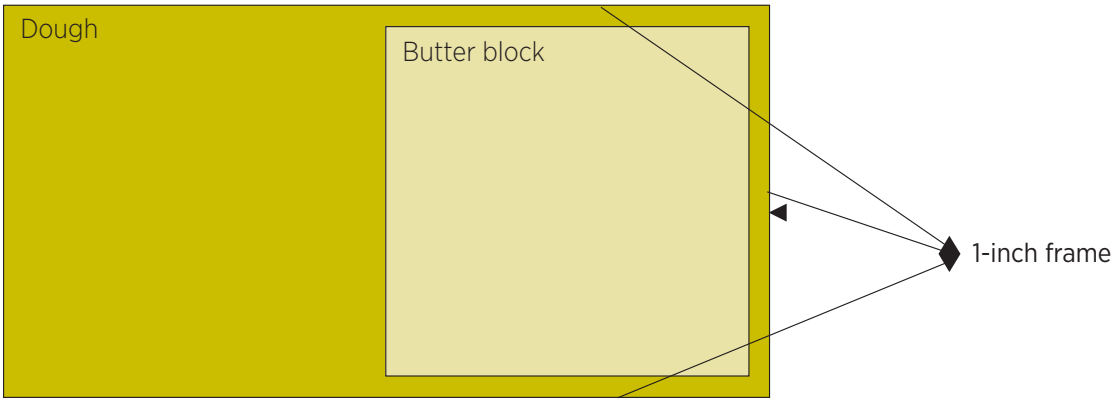
THE LOCK-IN

1. The next step in the lamination process is the lock-in. This refers to locking the butter inside the dough. The dough should be cold (refrigeration temperature) and the butter block should be pliable (21°C/70°F) but not soft.
2. Flip the dough onto a floured surface, preferably wood, and remove the silicone paper. The wrinkled side of the dough should face up.
3. Place the butter block on the right half of the dough. There should be about 2.5 cm/1 in of dough around the butter block. If the butter is at the right consistency, you can move it around the dough in case it is slightly askew.

   If it is too soft it will be impossible to move, but this is also part of a bigger problem. If the dough is firmer than the butter, it will not extend at the same rate as the butter when it is rolled out. Make sure that the dough that "frames" the butter block is no wider than 2.5 cm/1 in, since this is dough that will never be layered with butter (a.k.a. dead dough).
4. Roll the left side of the dough onto the butter block with your hands underneath it. The dough should completely cover the butter block. The reason to roll the dough onto the butter is that if the corners of the dough are pulled over the butter, the dough will become misshapen and the chances of getting air pockets in the dough

increase. If the dough is flush on the butter, there will be a minimal chance of air pockets getting trapped. Air pockets can show up in the final product, greatly deforming it.

5. Press down on the border of the dough with the heel of your hand without pressing on the butter. This will seal the border of the dough and keep the butter in place. The dough borders that were sealed need to be tucked under the "package." Make sure there is no flour under the dough, because if you try to tuck the dough flaps under the dough and it has flour, these flaps will not adhere to the package and will be loose.
6. Reshape the package to an even rectangle with your hands. It should be even on the sides and on the top as well (where it should not be thinner in one corner and thicker in another). Lightly dust the sheeter's surface.
7. Place the dough on the sheeter with the spine facing the rollers. Make sure that the dough isn't too thick; otherwise it will get caught on the protective guides and tear. Roll it down by hand if it is too thick. Make sure the rollers are on the largest setting as well. Lightly flour the surface of the dough. Start the sheeter and pass the dough through twice on the same number in both directions, then turn the dial down to the next number. Decrease the rollers by two or three numbers at a time; there is really no point in going in small increments. Keep going until the dough is as wide as a sheet pan. Rotate the dough 90 degrees to your left, and continue to sheet the dough down until it is 1.25 cm/.5 in thick.
8. Relax the dough by placing your palms completely underneath the dough and pulling it up from the sheeter in a delicate but assertive way. Make sure your palms or fingers do not damage the dough, but lift the dough up enough from the sheeter so that it literally will pull in. This will help the gluten relax and assure an evenly shaped pastry. Brush any excess flour off the dough with a bench brush.
9. Reshape the dough into a rectangle, using your hands. Do not tug on the corners to do so, since this will only make the corners very thin in relation to the rest of the dough (a.k.a. dog ears). Instead, pull the dough with both hands from the middle of the border out toward the corners; do this on each corner and the dough will maintain an even thickness.
10. Visually divide the dough into three equal parts vertically. Brush any excess flour off the dough. Fold the right third over the middle third. Brush any excess flour from the dough that has just been folded. Fold the left third of the dough on top of the previously folded dough, and brush off any excess flour. This is called a "three-fold."
11. Reshape the dough into an even rectangle and carefully transfer it to the sheet pan that it was on originally. Make sure that the silicone paper is lightly coated in flour; always use bread flour for dusting.



Place the butter block on the right half of the dough. There should be about 2.5 cm/1 in of dough around the butter block.

12. Reshape into a rectangle again while on the sheet pan, straightening out the borders with a bench knife by pushing into the dough with the bench knife at a 90-degree angle. Key point: It is crucial for a successful lamination that the dough be kept in an even rectangle shape throughout the entire process. This will ensure evenly thin layers of dough and butter.
13. Cover the dough with plastic wrap, tucking the plastic under the dough to keep it from drying out.
14. Relax and chill the dough (if necessary). There will be a total of four three-folds for both items, but between each of them, the dough needs to relax (the gluten needs to regroup and pull in). This is achieved through letting the dough sit on its own for at least 15 minutes. The dough will spend this time in the reach-in and/or at room temperature, depending on its consistency. The ideal consistency is the same as that of the thumb muscle on the palm of your hand when you bend or flex it. Do not let the dough stay cold for too long, since the butter will harden much more than the dough will, and don't forget that for successful lamination, the dough and the butter need to extend at the same rate. If the butter is too hard, it will crack as the dough is stretched. Common sense might tell you to just leave the dough to sit out at room temperature for the butter to soften, but by the time the butter is pliable (soft) again, the dough will be even softer, and again, the consistency of both will be different, and they will not extend evenly. If the butter can be felt through the dough, it has gotten too hard and the lamination is compromised. There is no way to fix this but to throw the dough out and start again (which is slightly unreasonable) or to soldier on and expect that the final product will not be of adequate quality. Hard butter will damage the dough by breaking through it, but so will soft butter that will "squish" its way through the fine layers of dough. When this occurs, the butter will "flood" into the dough, since the layer of dough has ripped (or cracked) and now there are two layers of butter. This makes the interior honeycomb look gummy and wet, and it is, since all the butter

Basic Method for Laminating Dough



FROM LEFT TO RIGHT:

1. When locking in, carefully roll the dough over the butter block to avoid air bubbles and misshapen dough.
2. After executing a three-fold, it is critical to reshape the dough into an even rectangle.
3. Properly laminated dough is composed of thin, uniform layers of dough and butter that allow the pastry to evenly expand upward as it bakes.

was too much for the delicate layers of dough to handle and the excess was absorbed into it instead of baking off as steam, thus preventing the formation of a fine air-cell network.

The time between folds is at least 15 minutes, but it can be 30 or 45 minutes if the dough does not feel right and is too soft. This time can be spent completely in refrigeration or at room temperature, or in some combination thereof, whatever is needed to achieve that right consistency. Typically after it has been rolled down and sheeted, the dough is soft from the friction from the roller or rolling pin, so it will typically have to spend some time in the reach-in. Again, it all depends on the consistency of the dough; soft yet firm, not squishy soft and not hard.

15. The dough is ready for the second three-fold when it has relaxed for at least 15 minutes and is at the right consistency (see above). Lightly flour the surface of the sheeter and place the dough on top with the spine toward the rollers. Do not flip or turn the dough over; it should be as it was on the sheet pan.

16. Sheet the dough until it is as wide as a sheet pan, then rotate 90 degrees to your left. It is very important to always start the dough with the spine first toward the rollers, then to always rotate it toward the same direction. In this case it will be 90 degrees to the left. You could always do 90 degrees to the right if you wanted to, so long as you always do it that way; the reason is that the direction of the layers should be consistent so that when the pastry bakes, it will bake upward and not in a zigzag fashion or slanted or falling on its side. This is another key point to successful lamination. Sheet the dough down to 1.25 cm/.5 in thick and perform another three-fold exactly as before: right third on top of the middle third, and the left third folded on top of that. It is also important to do this consistently the same way.

17. Relax and chill as in step 14 (see the special precautions).

18. Perform another three-fold as in steps 7 through 10. I like to roll it down further when it is on the sheet pan so that it is on the thin side (about 2.5 cm/1 in). The thinner the dough is rolled, the more evenly dispersed the general temperature will be. If it is too thick, the exterior will get cold before the center of the dough does. Even sheeting or laminating depends greatly on the consistency of the butter and the dough, and they should both be at the same consistency. Perform another three-fold after this dough relaxes and reaches the correct consistency, for a total of four three-folds; after the last three-fold, continue with the following instructions. This time, instead of refrigerating it, freeze it for at least an hour enclosed in plastic wrap. The butter needs be firm throughout but not hard to the point of cracking. Once the entire dough has firmed up but is not frozen solid, cut it into halves using a sharp chef's knife. Sheet each square down to the specific thickness, rotating it as needed so that it is about the size of a sheet pan. Remember, make sure the dough is firm but not rock hard; otherwise it will get damaged (cracked) as it is sheeted down. If it is very hard, simply place it in the refrigerator until it softens throughout before sheeting. Some cracking will inevitably happen around the border of the dough, but it is dough that will be used for other purposes (see page 50 for notes on dough trimmings). Conversely, if the dough is not firm enough yet, it will certainly get damaged while you are sheeting it down to the desired thickness.

During this last sheeting is when most doughs get damaged. Be careful, gentle, and aware of your dough. Use flour generously if necessary on both sides of the dough while sheeting the dough down. Croissant and pain au chocolat will be sheeted to 5 mm. Danish, depending on the style, will be shaped to either 5 mm, 7 mm, or 10 mm. Once it has been sheeted, relax it by lifting it up from the sheeter with the palms of your hands, delicately but assertively, then transfer it to a silicone-lined sheet pan. Brush off the excess flour on both sides of the dough—or it will dry out the dough and then it will crack—and cover it with plastic wrap completely. Let it harden again for 30 to 45 minutes or up to an hour, but do not let it get hard to the point where it will crack when you try to cut it. The ideal consistency to cut laminated dough is semi-frozen.

One of the unfortunate effects of the environment on laminated items is that in a matter of hours, most of the flakiness and crisp exterior can soften due to moisture in the environment as well as the moisture inside the item. A croissant that is fresh out of the oven won't be same four hours later, much less eight hours later. A croissant during spring will not be the same as a croissant in a hot and humid summer, where its lifespan is dramatically decreased.

I once took home a dozen croissants that I had made that day, for the weekend. Not that I was going to eat all twelve during the weekend, or even more than two. At most, half would be eaten by my family, and the rest I could freeze. I knew that the croissants would

be like brioche buns the next day and perhaps worse the day after that, so it has always been a common practice for me to refresh any flaky laminated dough in a hot oven for a few minutes. Once they came out of the oven warm, crisp, and refreshed, it was like nothing had happened. They were almost perfect. In fact, they were perhaps slightly better, since they were not only flaky again, but they were also warm. Some Danish pastries couldn't be refreshed if they had a topping such as a ganache or other heat-sensitive item on their surface, but if it were inside the pastry would crisp up just as well.

This all made me wonder if this technique could transfer to a café environment with fresh croissants and pain au chocolat. A small, high-quality convection oven was purchased and installed close to the pastry display case, away from the customers' view. The oven was set to 230°C/445°F, and multiple timers were installed on a wall next to the oven, each one set for 45 seconds, so that each time a croissant was placed in the oven and the door was closed, the person who loaded the oven could easily start the timer. Every order for Danish, croissant, and pain au chocolat was recrisped in the oven, regardless of the time of day, but they would always be freshly made Danish pastries, croissants, and pain au chocolat (day-old croissants were not served; for these purposes, see the almond croissant recipe on page 54). This technique makes a great product even better—sort of like warm chocolate chip cookies.

SPECIFIC LAMINATED PASTRY SHAPES

croissant

The recipe on page 53 yields about 60 croissants (80 g/2.82 oz each). There will be some dough trimmings that cannot be used for croissant but that can be used for other items (see page 50). The final baked weight of these croissants is about 73 g/2.57 oz on average. They will lose 9 to 10 percent of their weight in the form of steam.

1. Place the semi-frozen croissant dough sheet on a lightly floured surface. Using a croissant cutter with triangles that measure 8 by 21 cm/3.15 by 8.27 in (see Resources, page 540), cut out the croissants by pushing down hard with the cutter as you roll it away from you. If you do not get a clean cut, the croissant won't proof and bake well because the layers of dough will bind to each other. The croissant triangles may not detach from each other. If this happens, separate the triangles by cutting them with a knife; do not pull the triangles apart. Do not flour the croissant's surface heavily, since this will only dry out the dough's surface, and the rolled-up layers of dough need to adhere to each other when they proof and bake; use a very light layer of bread flour. If the croissants don't come off the cutter easily, pry them out with the tip of a paring knife or a small offset spatula tip. Do not force them out with your fingers. If you have little practice shaping croissants, place them on a sheet pan covered with plastic wrap to keep them from drying out. Refrigerate them because, don't forget, you are working with a delicate product that contains yeast, and the longer it sits out, the softer it will get, and the yeast will start proofing (fermenting) the dough.
2. For the amount of croissant dough on page 53, line 5 sheet pans with silicone paper.
3. Stack as many croissants as you feel comfortable shaping on the wooden worktable. Start with 5 or 6 triangles. Do not flour the table, since doing so will only make you chase the dough around the table and make it hard to shape the croissant.
4. Place the wide end of the croissant in one hand and very gently tug on the croissant from its center toward the tip, using your thumb on top and index finger at the bottom and sliding them toward the tip in a tugging motion to stretch out the triangle. It should stretch to 2.5 to 3.75 cm/1 to 1.5 in longer than its original shape and no more, since doing so will cause serious damage to the layers of dough.
5. When you are done stretching the triangle, place it on the table. The wide end of the triangle (or the top, if you will) will have a small incision made by the croissant cutter, which will create two distinct "flaps." Roll them out outward. These will be the tips of the croissant; do not pull too hard or it will rip the croissant dough; this will show in the honeycomb as a large air pocket. Gently roll the triangle up, pushing it away from you (some people are more comfortable rolling the triangle toward them instead of away). Try to make it as even as possible, so the segments are evenly sized. If they are correctly rolled up, there will be 5 distinct segments: 1 in the middle (which is somewhat triangular and part of the tip of the croissant) and 2 on each side of this triangle. The tip of the croissant should be tucked under, because as the croissant proofs and bakes, it will want to unroll, but if the tip is secured under the croissant, it won't. Place the croissants with the tips facing down, looking almost like an airplane, making sure that the tip is tucked under. See the Note on page 45.

Basic Method for Shaping Croisssants

FROM LEFT TO RIGHT:

1. To avoid damaging the dough's layers, use extreme care when stretching the croissant triangles before shaping.
2. Beginning with the wide end of the triangle, roll the dough to create five uniform segments.
3. Properly proofed croissants

6. Place the croissants on the sheet pan as you shape them (the less you touch them and handle them, the better), in a 4x3 grid (12 croissants per sheet pan maximum) in a diagonal slant. Evenly distributed croissants will bake evenly since there will be similar heat flow passing through them as they bake; randomly placed croissants will not bake evenly or well.
7. Once the croissants are shaped, they can be retarded in refrigeration for a few hours or proofed. Try not to freeze them for further use, since yeast will not react well to this. If proofing them, brush them with egg wash beforehand so that they won't develop a skin on top. Make sure to brush them with the right amount of egg wash; if there is too much, it will accumulate at the bottom of the croissant and it will look like scrambled eggs when it is baked. If retarding them in the refrigerator, wrap them loosely or place the sheet pan in a large plastic bag and tie it shut.

notes A croissant cutter is an invaluable investment. Cutting croissants by hand is inefficient, and most of the time it will yield poor results, since the dough needs to sit out at room temperature while it is measured and cut, the person doing the cutting hoping all the while that each triangle is the same as the next. With a cutter, the croissants are consistent and they are cut in a fraction of the time that it would take to cut them by hand.

Some bakers prefer to stretch the croissant longer and obtain 7 visible segments instead of 5. This could thin out the dough too much, risking rupture and damage of not only the exterior of the croissant but the interior as well, thus damaging the potential honeycomb. Seven segments will also take away from the dramatic look of the baked, thin laminated layers you worked so hard to achieve. Five is ideal.

See the Note on page 48 for advice on using day-old croissants.

pain au chocolat

The recipe on page 53 yields about 40 pieces. The raw weight is 102 g/3.6 oz each, plus 3 chocolate batons per pastry (5 g/.18 oz each) = 117 g/4.13 oz. For the chocolate batons, see Resources, page 540. The final weight of a baked pain au chocolat is about 109 g/3.84 oz. It loses

laminating dough with foie gras instead of butter

IT SEEMED LIKE A TRULY INSPIRED IDEA: Use duck foie gras instead of butter to laminate croissant dough. The plan was to come up with a flaky, croissant-like bun that would be used for a duck confit sandwich. What better than foie gras to laminate the dough? After doing some research, I found that Grade A foie gras has the same fat content as premium European butter, 82 percent. I have some experience with foie gras, and I know that it is somewhat pliable when it is semi-cold, such as butter can be if handled properly. Grade A foie gras is also easier to clean (it is not too veiny) and has fewer bruises than lower-grade lobes.

I ordered two 680-g/1.5-lb Grade A foie gras lobes, proceeded to clean them, and then passed them though a drum sieve to obtain a smooth paste, which I could easily shape into a rectangle. I weighed out the resulting block, then made enough croissant dough to obtain the right ratio of dough for the amount of fat I had.

Lamination went pretty much the same as it does with butter. I had no fat cracks or dough damage. I was concerned with maintaining the integrity of the dough, for no other reason than if the dough were to get damaged, I would ruin a rather expensive product that could not be fixed.

After the final sheeting I could see the foie gras through the dough, which was very exciting. After shaping the dough, I proofed it, and then I baked it. I could smell the foie gras as the dough baked. The whole shop smelled like foie gras, which I assumed meant that the croissant would be packed with foie gras flavor, and this was a great thing. Why had no one thought of this before?

After cooling the croissant, I tasted it. One bite, then two, three. Where did the foie gras go? The croissant had absolutely zero foie gras taste. The flavor had escaped along with the steam. It was still a flaky croissant, but a truly expensive one at that, with none of the foie gras goodness left behind.

between 8 and 10 percent of its original weight in the form of steam.

1. Line 4 sheet pans with silicone or parchment paper.
2. This will require 4 sheets of semi-frozen croissant dough. Each sheet will yield 9 to 10 pain au chocolat. Remove 1 sheet from the freezer and, if it is too hard, let it soften for a few minutes. If possible, use a thick Plexiglas guide to cut the croissants because it will be faster and more precise (measuring with a ruler takes too long). Make sure the guide is as long as a sheet pan and at least 1.3 cm/.5 in thick (ideally 2.5 cm/1 in thick) so that it will be sturdy enough and so that the side of the wheel cutter can lean on it to give a perfect 90-degree angle. In this case, the pain au chocolat will measure 8.75 by 12.5 cm/3.5 by 5 in.
3. Place the 12.5-cm/5-in guide on top of the dough and cut as many "columns" of dough as possible, then use the 8.75-cm/3.5-in guide to cut as many rows as possible. Use a wheel cutter (a.k.a. pizza cutter or rolling knife) that is sharp and not dull or damaged. Use as much of the dough as possible; there might be an extra piece or two gained by just cutting the dough in a different direction. One key point for all laminated dough cutting—use a sharp wheel cutter at an exact 90-degree angle so that the dough will be cut straight down. You can ensure that this will happen by leaning the wheel cutter on the Plexiglas frame. If the dough

Basic Method for Shaping Pain au Chocolat

FROM LEFT TO RIGHT:

1. To begin, roll the bottom edge of the dough toward the middle of the dough rectangle, over the two batons.
2. Once shaped, the dough should be rolled securely, yet loosely enough that steam can still escape during baking.
3. Properly proofed pain au chocolat

is cut in a slant, it will bake as a slant and will only get bigger as it bakes. A large wheel cutter is preferred over smaller ones.

4. There should be 9 to 10 pieces of dough on the sheet of parchment paper. They don't need to be separated or moved around; in fact, it is best that they are kept together. The short sides of the rectangles should face you. Brush the top half of these rectangles with egg wash and visually divide the rectangles in 3 pieces horizontally.
5. Place 1 chocolate baton (see Note) where the top third of the rectangle begins, closest to you, not on the furthest end, then 2 pieces where the bottom third begins. Repeat with all of the rectangles.
6. To shape the pain au chocolat, roll the bottom end of the rectangle up toward the middle of the rectangle (the bottom end will be between the top and bottom chocolate batons), and then roll all the way up. Do not roll the pain au chocolat too tight. Otherwise the steam inside will have no way to escape and it will produce a very large and unsightly air pocket. Place the rolled-up dough on a silicone-lined sheet pan, with the seam on the bottom and right in the middle. If the seam is not centered, the pain au chocolat will open up and unroll as it proofs and bakes.
7. Push the rolled-up dough down slightly from the top. Push gently with the tips of your fingers so as to not damage the dough. If you look at it from the side it should almost look like a pretzel. Repeat with the remaining dough rectangles and the other sheets of semi-frozen dough.
8. There should be 12 pieces per sheet pan, evenly placed in a 4x3 grid, all the pieces going in the same direction (diagonally) for an even bake. Wrap or bag the sheet pans and refrigerate to proof at a later time, or brush with egg wash and proof immediately. Make sure to brush with the right amount of egg wash; if there is too much, it will accumulate at the bottom of the pain au chocolat and it will look like scrambled eggs when it is baked.

note A good pain au chocolat requires good-quality chocolate. Try to use chocolate pieces that are specifically intended for this purpose. These are called chocolate *batons,* or, roughly translated, chocolate sticks, and they come in a variety of sizes, but they are all essentially the

same shape: a long, thin rectangle. Most importantly, they are bake-proof, meaning they have a higher fat content and won't melt away and disappear as the pain au chocolat bakes. The ones used in the recipe on page 54 come in a 300-count box (300 batons per box), each measuring .8 by 7.8 cm/.31 by 3.08 in and containing a minimum of 44 percent chocolate liquor.

DAY-OLD CROISSANTS AND PAIN AU CHOCOLAT

The reality is that sometimes there will be leftover croissants and pain au chocolat. They can in fact be used the following day, but not as croissants or pain au chocolat. They can be revived by making almond croissants and almond pain au chocolat (see page 54).

danish

The true distinction between an actual croissant or pain au chocolat and a Danish is the fact that Danish pastries typically have the following additions (one of them or a combination):

- Filling (such as marmalade, curd, cream cheese)
- Topping or Garnish (such as nuts, pearl sugar, cooked fruit)
- Glaze (such as apricot jam, fondant)

While the simplicity of a croissant is valued, Danish opens a whole new set of opportunities for flavor and texture combinations. Don't forget that the finished product should have a ratio of 60 percent dough/40 percent added ingredients (fillings, toppings, glazes), so that every bite has a little of both. All Danish pastries will have an initial weight of about 120 g/4.25 oz but, as with croissants, they will lose between 8 and 10 percent of their weight once they are baked. They will also increase about 3 times in volume, while the croissant increases by about 100 percent. There is a slight increase in weight while they proof because of the egg wash that is applied. Brush the pastry with egg wash 3 times before it is baked: right after shaping, when it is halfway proofed, and right before it is baked. Egg wash contributes to the final color and shine of the baked Danish, and every time it is applied, it will be absorbed. If the Danish is not brushed with egg wash three times, the skin of the Danish can also become dry and it will crack as it proofs, even in a proofer with controlled humidity.

PROOFING INSTRUCTIONS FOR ALL LAMINATED PASTRIES (except Advanced Viennoiserie)

Ideally the pastries will be proofed in a proof box with temperature and humidity control. If so, set the temperature to 27°C/81°F and the humidity to 85 percent. It can fluctuate between 80 and 90 percent humidity maximum. The proofing time for croissants and pain au chocolat is between 2 and 3 hours depending on how cold the dough was when it went into the proof box. The proofing time for Danish is between 1 and 2 hours. This dough moves very fast since it has a high percentage of yeast; the proofing time depends on how cold the dough was when it went into the proof box. If the Danish is just shaped and it is going to be proofed and baked the same day, it will spend less time in the proofer; if retarding the Danish overnight, it will be colder once it gets in the proofer and will take longer to bake. Try to get the pastries up to room temperature before they are placed in the proofer, or the high heat will damage the exterior layers of dough. Proofer-retarders are ideal, since you can place the finished pastries in them and program the machine so that it stays cold for a certain amount of time, and then slowly starts warming up to the desired temperature and humidity. These can be costly, though.

1. Once the pastries are shaped, brush them with a coat of egg wash. Use a pastry brush with very soft bristles that won't damage the pastry. Place the pastries in the proof box.
2. After about an hour of proofing, brush the pastries with another coat of egg wash.

Most laminated breakfast pastries will take between 2 and 3 hours to proof. One of the hardest things for a baker to know is when the dough has reached its maximum fermentation point. After this point, the dough will plateau and then the yeast will die. This is called "overproofed," and a telltale sign is a very strong smell of alcohol coming from the pastries, which is one of the by-products of fermentation: alcohol and CO_2. The key to knowing when a dough is properly proofed is a developed sense of touch. When an item is properly proofed and you push on it gently, it will spring back. Having said this, there are degrees of proofing, meaning that the dough will spring back at many stages of proofing. In this case, go by the size of the pastry, which should ideally double in size. If it is underproofed or overproofed, it will not spring back. Additionally, the surface of the overproofed pastry

will have a bubbly appearance, the pastry will have an alcoholic smell, and its size will be more than twice the size of the original. Why bother with the finger-pushing test? It is a way to gauge when the pastry is getting close. Once this occurs, it won't be long before the pastry is ready for the oven.

notes If you do not have a proof box, try using a Cres Cor cabinet or similar cabinet. Place one or two lit Sternos at the base of the cabinet. Above the Sternos, place a sheet pan; and on that, a hotel pan filled with hot water. Place the sheet pans with pastries in the cabinet. Keep a thermometer probe inside the cabinet so that you can monitor what is going on inside without having to open the cabinet door too frequently. It is also a good idea to have a humidity meter, or better yet a hygro-thermometer, which is a device that can measure both. If it is getting too hot in the cabinet, use only one Sterno, or place the cap on the Sterno halfway so that only half the flame is visible.

If you do not have a Cres Cor cabinet, there are plastic bags that are big enough to fit an entire speed rack. Alternatively, there is a heavier-duty version that is made out of canvas, shaped like a speed rack, and has a zipper that goes from top to bottom for easy access. Use the same setup of Sterno, water bath, and hygro-thermometer to create a proof box.

Ultimately, the proof box is the best method for proofing, but not everyone can afford or fit such a piece of equipment in their shops. If that is the case, you just have to pay closer attention and monitor your measuring instruments carefully.

BAKING INSTRUCTIONS

Always bake croissants with croissants, pain au chocolat with pain au chocolat, and Danish with Danish (the same varieties at the same time). The main reason for this is that each type of pastry bakes at its own pace, and it is detrimental to the pastry if the oven door is opened and closed to remove finished pastries before others are ready. Croissants and items made with that dough are very delicate, and this should not be taken for granted at any time during the process.

The only appropriate oven to use for laminated pastries is a convection oven, since it has better temperature control and will give a fast, direct heat from the fan that spins the heat around the pastries, causing the pastry to puff up quickly, known as "oven-spring."

croissants

1. Preheat the convection oven to 227°C/440°F.
2. Load the oven with a maximum of 4 sheet pans of croissants as quickly as possible to prevent the oven's temperature from dropping too much.
3. As soon as the oven door is closed, press the steam button. It should be programmed to deliver 1.25 L/1.32 qt of steam when the steam button is pushed; or, depending on the oven, press the steam button for 5 seconds.
4. Lower the temperature to 190°C/375°F.
5. Continue to bake. At the onset of color, after 3 to 5 minutes, open the vents and continue to bake for 5 more minutes or until they turn amber golden brown.
6. Once they are baked, slide the baked croissants onto a metro shelf to cool. Slide them off the sheet pan with the parchment paper they are on; don't try to pick them up individually. This prevents them from getting soggy at the base, since steam will be able to escape properly. If you do not have metro shelving, slide the baked pastries onto wire racks. Once they have cooled, they can be returned to a sheet pan.

pain au chocolat and all danish (except Advanced Viennoiserie on page 62)

1. Follow steps 1 through 3 for baking croissants.
2. Lower the temperature to 185°C/365°F.
3. Continue to bake. At the onset of color, after 3 to 5 minutes, open the vents and continue to bake for 5 to 7 more minutes or until they turn an amber golden brown.
4. For Danish: Once the Danish pastries come out of the oven, brush them with a hot mixture of 90 percent apricot jam and 10 percent water. Combine the apricot jam with the water in a sauce pot and bring to a simmer. Keep the glaze covered to prevent excess evaporation. It is very important that the hot liquid is brushed onto hot Danish, so that the moisture evaporates from the surface of the Danish and doesn't make it soggy. This layer of jam makes the Danish shiny and keeps it crisp for a longer period of time because it seals the outside of the pastry. Glaze the Danish pastries as they are cooling on a metro shelf or wire rack.

For pain au chocolat: Once the pain au chocolat are baked, slide the baked pastries onto a metro shelf to cool. Slide them off the sheet pan with the parchment paper they are on; don't try to pick them up individually.

5. Once the Danish pastries have cooled, you can split them in half and fill them with their respective fillings, reassemble them, and then glaze and apply any final garnishes.

Danish must be sold the day it is it baked. Any leftover pastries must be discarded. Unfortunately, when it comes to Danish, there is nothing similar to the almond cream for Croissant and Pain au Chocolat, since Danish already has the addition of a filling or glaze and it cannot be removed (without damaging the Danish). It is not worth trying to rescue them for next-day use.

UTILIZING CROISSANT DOUGH TRIMMINGS

When cutting out any laminated pastry from a sheet of dough, there will necessarily be some trimmings that cannot be used for their intended purpose. One way to not let this dough go to waste is to make a cinnamon-Danish loaf.

The method principles are as follows:

1. Place all of the dough trimmings on a sheeter. Make sure the dough is cold.
2. Start sheeting the trimmings at the highest number. The trimmings will start to fuse to one another as the dough gets thinner. The goal is to have a piece of dough that is about the same dimensions as a sheet pan and about 5 mm/.25 in thick. This will depend on how much trimming you have. You will need about 2.7 kg/6 lb of dough to make one full sheet pan at the above dimensions. If there is very little, freeze what you have and add the next day's trimmings to it, and so on, until there is enough to make at least 4 or 5 loaves. It is a good idea to offer these types of loaves for the weekend. That way you can build up your trimmings during the week by adding to them every day so that you can make and finish them on Fridays.
3. Once there is a sheet of dough the size of a sheet pan, let it relax and chill again in refrigeration for 30 minutes.
4. In the meantime, grease 1.36-kg/3-lb loaf pans that are 11.5 by 21.5 by 7.5 cm/4.5 by 8.5 by 3 in using nonstick oil spray.
5. Line the inside of the pans with paper loaf-pan liners with the same dimensions as the pans.
6. Remove the sheet of chilled dough from the refrigerator. Spread a thin layer of Cinnamon Smear (page 55) on it and roll the dough up loosely. Trim the ends off and cut the roll in half. Place each roll in one pan, with the seam at the bottom of the pan. Brush with egg wash and proof (see proofing instructions for Danish on page 48).
7. Preheat a convection oven to 160°C/320°F.
8. Bake until the internal temperature of the loaf reaches 95°C/203°F. Brush a layer of hot apricot glaze on the loaf as soon as it comes out of the oven. Sprinkle about 50 g/1.76 oz per loaf of toasted pecans on top.

Other options: Coat the loaf in fondant glaze drizzle and pecans. Warm some pouring fondant with a little corn syrup to loosen it up, and then drizzle it on the loaf pan in straight or crisscrossed lines. Sprinkle pecans (or any other nut) on top before the glaze sets. You can flavor the glaze with cinnamon or any other spice.

Cut the roll of dough with the layer of cinnamon smear into 5-cm-/2-in-thick pieces instead of loaf portions and finish them as sticky buns with the fondant glaze as above.

possible defects of yeast- and steam-raised (laminated) products

defect	cause(s)	solution (the appropriate steps need to be taken beforehand)
Very greasy pastry	Underproofed*. When the pastry was baking, the dough had not developed enough structure during the proofing process to support the butter as it melted during the baking, so the butter melted out of the pastry instead of inside it to create steam pockets (honeycomb). There will also be a large amount of butter on the sheet pan. Dough may have been damaged to the point where the butter leaked out. It could have been damaged during shaping (it was too cold or too soft) and the outer layer of dough was ripped, causing the butter directly underneath it to melt out.	Bake the product when properly proofed. The pastry should have doubled in size before baking. Handle the dough carefully.
Flat pastry	Possibly overproofed* Yeast could have been inactive or improperly scaled out. The oven temperature was too low. Speed is of the essence when you are loading a convection oven, since the longer the door is open the more the temperature will drop, and to obtain proper volume, the pastries need to get a quick oven-spring from a hot oven. Always use a convection oven on the highest fan speed to get the best oven-spring and highest volume for the pastries.	Bake the product when properly proofed. The pastry should have doubled in size before baking. Make sure to scale out all of the ingredients properly. Check the oven temperature before baking. Load the oven quickly.
Gummy interior and/ or honeycomb	There was dough damage during the lamination process, in which the dough may have been ripped, and the butter flooded from one layer to another. The honeycomb will have a "wet" look instead of a dry one.	Handle the dough carefully.
Too small	Did not proof long enough*. Don't forget that proof time is between 2 and 3 hours. If you try to rush, it won't work. There was insufficient humidity in the proofer. Humidity should be between 80 and 90%. This will help moisten the exterior of the pastry, which will help it expand as it bakes.	Bake the product when properly proofed. The pastry should have doubled in size before baking. Make sure the proofer is adequately set for the correct humidity. It is a good idea to have a humidity meter in the proof box to monitor humidity accuracy.
Too big	Overproofed*. You will also notice an alcoholic smell from the yeast overfermenting and producing excess CO_2 and alcohol.	Bake the product when properly proofed. The pastry should have doubled in size before baking.

(continued)

defect	cause(s)	solution (the appropriate steps need to be taken beforehand)
Honeycomb looks like the crumb of brioche, but is not gummy or wet looking.	The butter that was used to make the butter block was overpaddled and therefore trapped too much air, and that air stayed in the butter. Usually this butter is overpaddled when it is too cold; some bakers just let the machine do the softening, but this only incorporates air into the butter. Plan ahead and use soft, room-temperature butter to make the butter blocks.	Mix the butter until it is pliable and soft.
Layers are indistinct inside or outside the pastry.	Severe dough damage, where there are no distinguishable layers of dough.	Handle the dough with care.
The pastry lost its shape after baking (round pastries are oval, square pastries are rectangular).	The dough was not relaxed enough either during lamination (between folds) or after it was sheeted. Always make sure to relax the dough as much as possible. Try to get your hands completely underneath the dough and lift it up from left to right or right to left—it doesn't matter which, as long as you go from one end to the other to relax the entire sheet of dough, and then perform the fold. When performing the final sheeting (after the last three-fold, when the dough is cold throughout), relax the dough in the same way, and then place it on a sheet pan to get cold again.	Relax the dough throughout the entire laminating process.
Crust looks like bark from a tree.	The pastry was not brushed with egg wash enough and dried out when it proofed, or it was left exposed in the refrigerator or in a freezer for too long without being wrapped. The proof box did not have the correct setting for humidity (it needs to be between 80 and 90%).	Egg wash the pastries two to three times during proofing to keep the outer skin from drying out. Make sure the proofer is adequately set for the correct humidity. It is a good idea to have a humidity meter in the proof box to monitor humidity accuracy.

*Adequate proofing (fermentation) will vary from item to item. In most cases, the product will double in size, but it is not a set rule for all items. Knowing when a dough is proofed requires extensive experience gained through trial and error. Touching the dough to test for proof and having it double in size are two ways to tell if the dough is ready to bake or not.

CROISSANT AND DANISH DOUGH

yield: 5 kg/11 lb .32 oz

INGREDIENT	METRIC	U.S.	%
DOUGH			
Bread flour	**2.13 kg**	**4 lb 11.1 oz**	**100%**
Salt	**53 g**	**1.87 oz**	**2.5%**
Sugar	**256 g**	**9.03 oz**	**12%**
Instant dry yeast (gold label)	**43 g**	**1.52 oz**	**2%**
Water, at 21°C/70°F	**1.02 kg**	**2 lb 4 oz**	**48%**
Butter, soft	**426 g**	**15.03 oz**	**20%**
Butter block	**1.06 kg**	**2 lb 5.4 oz**	**50%**

1. **FOR THE DOUGH:** Combine all of the ingredients except the softened butter in a 20-qt mixer bowl using the hook attachment. Mix on low speed until the mixture reaches a shaggy mass, about 1 minute.

2. Add the softened butter and mix for 3 to 4 minutes on low speed. Switch to medium speed and mix for 3 to 4 more minutes, or until the stage of medium gluten development.

3. Line a sheet pan with silicone paper and lightly flour it. Place the dough on the prepared sheet pan, cover with plastic wrap, and bulk ferment for 45 minutes. Punch the dough down and shape into an evenly sized rectangle with your hands.

4. Cover with plastic wrap again and freeze for 45 minutes. Turn the dough around after 20 minutes for even temperature distribution. You can start laminating this dough right after this step, or reserve it frozen, very well wrapped with plastic, and then thaw it in the refrigerator.

5. **TO MAKE THE BUTTER BLOCK:** Weigh the butter. It is always best to keep some butter at room temperature for this purpose, or to pull it out of the refrigerator a few hours before using. If room-temperature butter is not available, weigh out the butter and dice it, then microwave it in a bowl at 10-second intervals until it reaches 21°C/70°F. Alternatively, pound the butter with a French rolling pin until it is malleable. The butter block should be half the size of the dough, and at least an inch smaller lengthwise and widthwise.

6. Follow the instructions for the lamination process on page 44.

Croissant

ALMOND CROISSANTS OR PAIN AU CHOCOLAT

yield: about 40 pieces

INGREDIENT	METRIC	U.S.	%
ALMOND CREAM			
Butter, diced, at 21°C/70°F	**479 g**	**16.9 oz**	**23.93%**
Sugar	**479 g**	**16.9 oz**	**23.93%**
Eggs, at 21°C/70°F	**479 g**	**16.9 oz**	**23.93%**
Almond flour	**479 g**	**16.9 oz**	**23.93%**
Cake flour, sifted	**85 g**	**3.01 oz**	**4.27%**
Day-old Croissants (page 53)	**40 pieces**	**40 pieces**	
Almonds (slivered or sliced)	**400 g**	**14.11 oz**	**16.67%**

1. **FOR THE ALMOND CREAM:** Cream the butter and sugar in a mixer bowl using the paddle attachment until it is light and fluffy.

2. Add the eggs in 4 additions, scraping the bowl between each addition.

3. Add the almond flour and the cake flour and mix for a few more seconds, or until a homogeneous mass is obtained.

4. Transfer to an airtight container and refrigerate. The almond cream will keep for a week if stored this way.

5. **FOR THE ASSEMBLY AND FINISHING:** Preheat the convection oven to 150°C/300°F.

6. Pipe about 50 g/1.76 oz of almond cream on top of each croissant or pain au chocolat.

7. Sprinkle about 10 g/.35 oz of slivered or sliced almonds on top of each pastry.

8. Bake until the almond cream and the almonds are golden brown, about 10 minutes.

note Can also be made with Pain au Chocolat.

CINNAMON SMEAR

yield: **1.8 kg/3lb 15.52 oz (enough for 4 loaves at 450 g/15.87 oz each)**

INGREDIENT	METRIC	U.S.	%
Butter, melted	**646 g**	**1 lb 6.78 oz**	**35.88%**
Brown sugar	**618 g**	**1 lb 5.8 oz**	**34.32%**
Light corn syrup	**70 g**	**2.47 oz**	**3.9%**
Pastry flour	**90 g**	**3.17 oz**	**5.01%**
Ground cinnamon	**90 g**	**3.17 oz**	**5.01%**
Vanilla paste	**15 g**	**.53 oz**	**.84%**
Eggs	**271 g**	**9.55 oz**	**15.04%**

1. Combine the butter, brown sugar, and corn syrup in an electric mixer bowl. Mix with the paddle attachment on low speed until smooth.

2. Add the flour and cinnamon and mix until smooth.

3. Add the vanilla paste, then the eggs one by one, scraping the sides to ensure an even mix.

4. Refrigerate or use right away. If refrigerating, you will need to paddle it for a few seconds before you spread it on the dough so that it is smooth and easy to spread.

5. The cinnamon spread will keep in an airtight container in the refrigerator for up to 1 week.

KEY LIME CURD DANISH

yield: about 40 pieces

INGREDIENT	METRIC	U.S.	%
KEY LIME CURD			
Key lime juice	**273 g**	**9.63 oz**	**18.18%**
Sugar	**273 g**	**9.63 oz**	**18.18%**
Eggs	**273 g**	**9.63 oz**	**18.18%**
Butter	**682 g**	**1 lb 8 oz**	**45.45%**
KEY LIME GLAZE			
Key lime juice	**750 g**	**1 lb 10.4 oz**	**78.95%**
Confectioners' sugar	**200 g**	**7.05 oz**	**21.05%**
Danish Dough, semi-frozen (page 53)	**5 kg**	**11 lb .32 oz**	
Egg Wash for Brushing (page 13)	**as needed**	**as needed**	
Poppy seeds	**80 g**	**2.82 oz**	

1. **FOR THE KEY LIME CURD:** Follow the method for lemon curd on page 16.

2. **FOR THE KEY LIME GLAZE:** Combine all of the ingredients in a bowl and whisk until evenly combined. If the mixture is too thick, add more lime juice. The consistency should be as thick as pouring fondant. If using immediately, pour the glaze into a piping bag. Otherwise, transfer to an airtight container and cover the surface directly with plastic wrap. Reserve in the refrigerator; discard after 2 weeks.

3. **FOR THE ASSEMBLY:** Sheet the semi-frozen dough to 5 mm/.2 in on the sheeter. Return to the freezer for about 1 hour, or until semi-frozen. Use a wheel cutter and a ruler or a guide to cut out 9-cm/3.6-in squares. Dip the wheel cutter in flour before each cut.

4. Dip a half-circle cutter in bread flour and cut out half-circles on the diagonal in the square. Brush the borders of each square with egg wash.

5. Bring one corner of the square over to reach the other tip of the square, leaving the cutout semicircle down the middle of the square. Brush with egg wash.

6. **TO FINISH:** Follow the proofing instructions for laminated pastries on page 44.

7. When fully proofed, follow the baking instructions on page 49.

8. Once the pastries have cooled, place the Key lime curd inside a piping bag with a Bismarck tip (or a long, thin tip). Pipe the curd into the Danish in the center, where the semicircle meets the triangle.

9. Drizzle the Key lime glaze over the entire surface of the Danish in a thin, steady stream, creating very fine, straight lines. Sprinkle about 2 g/.07 oz of poppy seeds over the Danish before the glaze sets, trying to disperse them as much as possible.

STRAWBERRY D'ARTOIS DANISH

yield: about 40 pieces

INGREDIENT	METRIC	U.S.	%
STRAWBERRY JAM			
Strawberries, stemmed and hulled	**750 g**	**1 lb 10.5 oz**	**50%**
Sugar	**750 g**	**1 lb 10.5 oz**	**50%**
Tahitian vanilla pods	**2**	**2**	
CREAM CHEESE FILLING			
Cream cheese, at room temperature	**708 g**	**1 lb 8.96 oz**	**70.82%**
Superfine sugar	**283 g**	**9.99 oz**	**28.33%**
Tahitian vanilla powder	**9 g**	**.30 oz**	**.85%**
Danish Dough (page 53)	**5 kg**	**11 lb .32 oz**	
Egg Wash for Brushing (page 13)	**as needed**	**as needed**	
Dextrose powder	**100 g**	**3.53 oz**	

1. **FOR THE STRAWBERRY JAM:** Combine the strawberries and the sugar in a 4-qt sauce pot. Split and scrape the vanilla pods; add both the pods and seeds to the pot.

2. Start cooking over high heat. Once the mixture comes to a boil, turn the heat down to medium.

3. Continue to cook until the jam reaches 108°C/226°F. Remove the vanilla pods. Pour into a hotel pan to cool to room temperature. Once it has cooled, transfer to an airtight container and refrigerate. The jam will keep for up to 3 weeks if properly stored.

4. **FOR THE CREAM CHEESE FILLING:** Combine all of the ingredients in a mixer bowl fitted with the paddle attachment. Mix on low speed until the sugar has dissolved and the mix is homogeneous. Adjust the sweetness if necessary. Reserve refrigerated, but in order to be soft enough to pipe, it needs to soften for a few hours at room temperature. If kept refrigerated, the filling will keep for up to 1 month.

5. **FOR THE ASSEMBLY:** Sheet 3.75 kg/8 lb 4.28 oz of the semi-frozen laminated dough to 5 mm/.2 in and the remaining dough to 3 mm/.12 in. Place in the freezer for 45 minutes or until semi-frozen.

6. Remove the thinner piece of dough from the freezer. Dip a rolling lattice cutter in bread flour and roll it over the dough, pressing down firmly so that it cuts through the dough. Gently pull the dough so that the cuts open up. It will look like a honeycomb. Return to the freezer to harden.

7. Meanwhile, remove the thicker piece of dough from the freezer and cut into 9-cm/3.6-in squares using a wheel cutter and a ruler or a guide.

8. Score each square with a 5-cm/2-in round cutter in the middle of the square. Brush the borders of each square with egg wash. Place the squares in the refrigerator.

9. Cut the lattice into 9-cm/3.6-in squares. Place each lattice square on top of each thicker square, making sure that they are evenly lined up.

10. **TO FINISH:** Follow the proofing instructions for laminated pastries on page 44.

11. When fully proofed, follow the baking instructions on page 49.

12. Once they are baked and cooled, transfer the strawberry jam to a piping bag with a Bismarck piping tip or similar long, thin piping tip. Do the same with the cream cheese filling.

13. Insert the piping tip through the side of the Danish and fill with 30 g/1.05 oz strawberry jam. Once all of the Danish have been filled with strawberry jam, finish filling them with about 25 g/.88 oz each of the cream cheese filling. Insert the piping tip in the same spot used to insert the strawberry jam.

14. Place the dextrose powder in a small sifter. Sift over all of the Danish; try to coat each piece evenly.

note This cream cheese filling recipe is a no-bake filling, which can and will be applied once the Danish is baked, but it can also be used before it is baked if needed. Traditional cream cheese fillings are made with eggs, which easily curdle at high baking temperatures, resulting in a grainy and unpleasant mouthfeel.

CANDIED MEYER LEMON AND GRAPEFRUIT MARMALADE DANISH

yield: **about 40 pieces**

INGREDIENT	METRIC	U.S.	%
GRAPEFRUIT MARMALADE			
Grapefruit, sliced 5 mm/.2 in thick	**1.25 kg**	**2 lb 12.16 oz**	**55.56%**
Sugar	**1 kg**	**2 lb 3.2 oz**	**44.44%**
Danish Dough (page 53)	**5 kg**	**11 lb .32 oz**	
Candied Meyer Lemon Zest (page 215)	**200 to 280 pieces**	**200 to 280 pieces**	

1. **FOR THE GRAPEFRUIT MARMALADE:** Place the grapefruit discs in a 4-qt sauce pot and cover with hot water; bring to a boil. Drain. Repeat 5 more times, changing the water each time. This will remove the bitter taste from the rind. This should yield about 1 kg/2 lb 3.2 oz of grapefruit once is has been blanched, but weigh it out to make sure because it needs to be cooked with an equal amount of sugar.

2. Combine the blanched rind with an equal amount of sugar in the same pot in which the rind was blanched.

3. Cook over medium-low heat until the skin is translucent, about 2 hours. Alternatively, measure the sugar density with a refractometer. It should measure 69° Brix, at which point the marmalade will be at the ideal consistency.

4. Once it reaches the desired Brix or the rind is translucent, pour it into a hotel pan and let it cool to room temperature. Transfer to an airtight container. If it is kept refrigerated, the rind will keep for up to 3 months.

5. **FOR THE ASSEMBLY:** Sheet the semi-frozen dough to 5 mm/.2 in. Return it to the freezer for 45 minutes or until it is semi-frozen again.

6. Cut discs out of the dough using a 12.5-cm/5-in ring cutter, and then cut them in half, in order to obtain 2 half-circles.

7. **TO FINISH:** Follow the proofing instructions for laminated dough on page 44.

8. When fully proofed, follow the baking instructions on page 49.

9. Fill a piping bag with the grapefruit marmalade; no tip is needed.

10. Once the pastries have cooled, cut them in half vertically with a sharp serrated knife; try to cut in a very straight line. If done properly, once both pieces are put back together, the cut will not be noticeable. Pipe about 50 g/1.76 oz of marmalade onto the bottom half of each Danish, and then put the top, or lid, back on.

11. Garnish with 5 to 7 pieces of Candied Meyer Lemon Zest, randomly spread out.

CHOCOLATE GANACHE AND CHERRY COMPOTE DANISH

yield: **about 40 pieces**

INGREDIENT	METRIC	U.S.	%
GANACHE			
Dark chocolate coins (64%)	**686 g**	**1 lb 8.16 oz**	**42.86 %**
Heavy cream	**762 g**	**1 lb 10.88 oz**	**47.62 %**
Butter, diced, at 21°C/70°F	**152 g**	**5.38 oz**	**9.52 %**
Danish Dough, semi-frozen (page 53)	**5 kg**	**11 lb .32 oz**	
CHERRY GLAZE			
Cherry poaching liquid	**500 g**	**1 lb 1.6 oz**	**22.22%**
Confectioners' sugar	**1.75 kg**	**3 lb 13.76 oz**	**77.78%**
Poached Rainier Cherries (page 19)	**1 kg**	**2 lb 3.2 oz**	
Gold leaf	**as needed**	**as needed**	

1. **FOR THE GANACHE:** Place the chocolate in a small stainless-steel bowl.

2. Bring the heavy cream to a boil, pour half of it onto the chocolate, and wait 45 seconds (this helps get the melting process started). Stir the mixture with a rubber spatula until most of the chocolate is incorporated (it won't dissolve completely with only half the heavy cream). Bring the other half of the heavy cream up to a boil again and pour over the chocolate mixture, stirring with a rubber spatula until completely incorporated.

3. Stir in the butter and mix until it has dissolved.

4. Transfer to an airtight container and reserve at room temperature. The ganache can only be used once it has set at room temperature, about 6 hours after it has been made. It will keep for 4 days at room temperature. If refrigerated, it can keep up for to 2 weeks, but it will need to

be pulled out and warmed up to room temperature at least 4 hours before it is needed so that it will be soft enough to pipe and hold its shape.

5. **FOR THE ASSEMBLY:** Sheet the semi-frozen dough to 5 mm/.2 in on the sheeter. Return the dough to the freezer for about 45 minutes or until it is semi-frozen.

6. Cut rectangles 5 by 12.5 cm/2 by 5 in out of the dough using a wheel cutter and a ruler or guide.

7. **TO FINISH:** Follow the proofing instructions for laminated pastries on page 44.

8. When fully proofed, follow the baking instructions on page 49.

9. **FOR THE CHERRY GLAZE:** Mix both ingredients together in a bowl. Adjust the consistency with poaching liquid or with confectioners' sugar; it should be as thick as pouring fondant. Pour into a piping bag and reserve while filling the Danish with ganache and the poached cherries. It will keep for 3 weeks in an airtight container in the refrigerator.

10. Once the Danish have cooled, fill a piping bag fitted with a Bismarck tip or other long, thin tip with the chocolate ganache.

11. Cut the baked Danish rectangles in half horizontally using a sharp serrated knife. When done properly, both pieces should fit together seamlessly.

12. Pipe 40 g/1.41 oz of ganache onto each bottom piece of Danish. Place 25 g/.88 oz of poached cherries on top of the ganache. Put the lids on the Danish. Drizzle the cherry glaze on top of each Danish to create a very tight pattern of thin lines. Garnish with a small fleck of gold leaf.

note Ganache is an emulsion, and this is why we add the heavy cream in 2 additions. If it is added all at once, the ganache might have a grainy consistency once it sets. This is an indication of a broken emulsion.

BLACK CURRANT AND GIANDUJA CREAM DANISH

yield: about 40 pieces

INGREDIENT	METRIC	U.S.	%
BLACK CURRANT FILLING			
Almond paste	**508 g**	**1 lb 1.92 oz**	**50.85%**
Sugar	**254 g**	**8.97 oz**	**25.42%**
Black currant purée	**169 g**	**5.98 oz**	**16.95%**
Egg yolks	**68 g**	**2.39 oz**	**6.78%**
GIANDUJA CREAM			
Gianduja, coarsely chopped	**1.6 kg**	**3 lb 8.48 oz**	**66.67%**
Heavy cream	**800 g**	**1 lb 12.16 oz**	**33.33%**
Danish Dough, semi-frozen (page 53)	**5 kg**	**11 lb .32 oz**	
Dark chocolate (64%), melted	**200 g**	**7.05 oz**	
Praline croquant	**400 g**	**14.11 oz**	

1. **FOR THE BLACK CURRANT FILLING:** In a 5-qt mixer bowl fitted with the paddle attachment, mix the almond paste, sugar, and black currant purée on low speed until a homogeneous mass is obtained. Add the egg yolks and continue to mix until completely incorporated. If making larger amounts, add the eggs in 4 additions so that they can incorporate evenly and not break the mixture.

2. Once mixed, transfer to an airtight container and refrigerate. The filling will keep for 8 to 10 days.

3. **FOR THE GIANDUJA CREAM:** Place the gianduja in a small stainless-steel bowl.

4. Bring the cream to a boil and pour over the gianduja. Wait for 45 seconds, then stir with a rubber spatula until a homogeneous mass is obtained.

5. Transfer to an airtight container and refrigerate. Pull it out at least 4 hours and up to the night before it is needed so that it is soft enough to pipe and hold its shape. It will keep for 2 weeks refrigerated and for 4 days if left at room temperature.

6. **FOR THE ASSEMBLY:** Sheet the semi-frozen dough to 5 mm/.2 in and return to the freezer for about 45 minutes or until it is semi-frozen again.

7. Spread the black currant filling across the entire surface of the dough, leaving a 2.5-cm/1-in border around the filling; it should be a very thin layer.

8. Cut out rectangles 9 by 12.5 cm/3.6 by 5 in using a wheel cutter and a guide or ruler. Roll the Danish rectangles up loosely. Place them on a sheet pan with the seam centered directly at the base.

9. **TO FINISH:** Follow the proofing instructions for laminated pastries on page 44.

10. When fully proofed, follow the baking instructions on page 49.

11. Once the pastries have cooled, fill a piping bag fitted with a Bismarck tip or other long, thin piping tip with gianduja cream. Insert the tip into the side of the Danish and pipe about 60 g/2.11 oz into each piece.

12. Place the melted chocolate in a piping bag and cut a hole to make a very small tip. Drizzle the chocolate quickly across the top of the Danish to create a very tight pattern of thin lines.

13. Sprinkle praline croquant across the left half of the Danish.

14. Refrigerate for 5 minutes to set the chocolate, but no longer; otherwise the flaky layers of Danish will soften with condensation.

notes If desired, substitute any other fruit purée (apple, raspberry, strawberry, pear, etc.) for the black currant purée as long as it is of purée consistency (thick).

Gianduja is a type of chocolate (usually milk) that has a percentage of hazelnut paste added, giving it a distinct flavor. It is very high in fat, which is why it doesn't need to be emulsified like ganache does.

advanced viennoiserie

These Danish varieties embody a slightly higher degree of complexity as far as how they are finished. The lamination process is the same, but they are assembled and finished differently. There is a quick-bread element (frangipane and pound cake) incorporated into each recipe, which is piped into the Danish before it is baked. This contributes two things. It adds texture and can also add a secondary flavor, but most importantly, it helps support the central structure of the Danish. As it bakes, it pushes up at the same rate as the Danish dough and, once the Danish cools, it stays in place. It helps the Danish cool without a chance of it deflating or collapsing onto itself.

The finishing is also more involved. There is a fruit component that is always cooked beforehand, a glaze, and a decorative garnish, which is not just for visual appeal, but also adds texture and flavor. These are very special Danish pastries that combine the wonderful flaky texture of Danish with a combination of textures and flavors that make a good thing even better.

POACHED PEAR, FRANGIPANE, CASSIS PÂTE DE FRUIT, AND GUINNESS GLAZE DANISH

yield: about 40 pieces

INGREDIENT	METRIC	U.S.	%
POACHED PEARS			
Water	**2 kg**	**4 lb 6.56 oz**	**44.44%**
Guinness beer	**1.5 kg**	**3 lb 4.96 oz**	**33.33%**
Sugar	**1 kg**	**2 lb 3.2 oz**	**22.22%**
Vanilla pods, split and scraped	**3**	**3**	
Bosc pears, semi-ripe	**14**	**14**	
FRANGIPANE			
Almond paste	**219 g**	**7.71 oz**	**21.85%**
Butter, at 21°C/70°F	**219 g**	**7.71 oz**	**21.85%**
Sugar	**219 g**	**7.71 oz**	**21.85%**
Eggs, at 21°C/70°F	**251 g**	**8.85 oz**	**25.08%**
Cake flour, sifted	**94 g**	**3.3 oz**	**9.36%**
GUINNESS GLAZE			
Guinness beer	**396.04 g**	**13.97 oz**	**24.75%**
Confectioners' sugar	**1.18 kg**	**2 lb 9.62 oz**	**74.26%**
Lemon juice	**15.84 g**	**.56 oz**	**.99%**
Danish Dough (page 53), **semi-frozen**	**5 kg**	**11 lb .32 oz**	
Apricot Glaze (page 49), **warm**	**as needed**	**as needed**	
Black Currant Pâte de Fruit (page 480), **cut into 3-cm/1.2-in squares**	**40**	**40**	

1. **FOR THE POACHED PEARS:** In a medium sauce pot, combine the water, beer, sugar, and vanilla pods and seeds. Bring to a boil over high heat.

2. Meanwhile, peel the pears, cut them into quarters (or eighths if they are large), and remove the cores with a knife. Once the liquid reaches a boil, turn off the heat and place the pears in the liquid. Cover them with a cloth or heavy-duty paper towel and let them cool to room temperature.

FROM TOP TO BOTTOM: Fig Jam, Roasted Fig, Stone Pine Liqueur Glaze, and Toasted Almond Danish (page 69), Pineapple Jam, Coconut Ganache, and Dark Rum Glaze Danish (page 67), Apple Butter, Candied Apple, Applejack Glaze, and Caramel Danish (page 65), Poached Pear, Frangipane, Cassis Pâte de Fruit, and Guiness Glaze Danish (page 62)

This should be enough heat to cook the pears through. If not, return them to cook over low heat until they are tender. Cool them quickly over an ice bath or in a hotel pan in the refrigerator. Remove the vanilla pods.

3. Once they have cooled, transfer to an airtight container and refrigerate. The poached pears will keep for up to 1 week.

4. **FOR THE FRANGIPANE:** Combine the almond paste, butter, and sugar in the bowl of an electric mixer fitted with the paddle attachment. Mix on low speed until it forms a homogeneous mass.

5. Add the eggs 1 at a time. Scrape the sides of the bowl and the paddle and mix for a few more seconds.

6. Add the cake flour and pulse the mixer until incorporated.

7. If ready to use, pour into a piping bag and reserve at room temperature for ease of piping (it hardens when it is refrigerated); otherwise reserve refrigerated in an airtight container. The frangipane will keep for up to 2 weeks in the refrigerator.

8. **FOR THE GUINNESS GLAZE:** Whisk together the beer, sugar, and lemon juice in a bowl until thoroughly combined. Adjust the consistency until it is similar to warm pouring fondant. Adjust the thickness if necessary by adding more beer. Transfer to a piping bag if using soon. Otherwise, reserve in an airtight container at room temperature. It will keep for up to 1 month in the refrigerator.

9. **FOR THE ASSEMBLY:** Sheet the semi-frozen dough to 7 mm/.3 in thick. Return the dough to the freezer for about 45 minutes or until it is semi-frozen again.

10. Use an oval cutter measuring 5 by 15 cm/2 by 6 in with a corner radius of 2.5 cm/1 in (see Resources, page 540, for custom-made cutters) to cut out the sheet of dough.

11. Cut a slit lengthwise down the middle of the oval using a paring knife, starting 2.5 cm/1 in from the top and ending 2.5 cm/1 in from the bottom.

12. Pull one end of the dough down and twist it in through the slit, then pull it out. Repeat with the remaining pieces of dough. Place the shaped dough on a sheet pan lined with parchment paper.

13. Pipe about 25 g/.88 oz of frangipane down the opening of the oval. It should be just enough to fill the gap. Wrap the sheet pans loosely and let the Danish retard overnight in the refrigerator.

14. **TO FINISH:** Proof the Danish for 45 minutes to 1 hour at 27°C/80°F with 80 to 90 percent relative humidity.

15. Heat a convection oven to 226°C/440°F. Load the oven and press the steam button for 3 seconds. Once the steam button has been pressed, set the temperature to 185°C/365°F.

16. On the onset of color, open the vent. This helps develop a flaky crust and a deep golden brown color. Bake until the Danish achieve a deep brown golden color, 8 to 12 minutes depending on the oven. Remove the Danish from the oven and slide the parchment paper and Danish onto a sheet pan fitted with a cooling rack or onto a metro shelf. While they cool, brush the pastries with hot apricot glaze.

17. Once they have cooled, drizzle a random thick line of Guinness glaze across the middle of each Danish. Place 2 or 3 pieces of pear on top of the glaze. Place 3 pieces of cassis pâte de fruit in a random pattern over each Danish.

note Some ovens, such as the one used to bake Danish, dispense a preset amount of steam each time the steam button is pressed and can be programmed to release a specific amount. In this case, the oven should be set to dispense 1 L/1.06 qt of steam for a fully loaded oven of 5 sheet pans.

APPLE BUTTER, CANDIED APPLE, APPLEJACK GLAZE, AND CARAMEL DANISH

yield: about 40 pieces

INGREDIENT	METRIC	U.S.	%
CINNAMON POUND CAKE			
Butter	**364 g**	**12.85 oz**	**24.29%**
Sugar	**383 g**	**13.5 oz**	**25.51%**
Eggs	**292 g**	**10.29 oz**	**19.44%**
Salt	**7 g**	**.23 oz**	**.43%**
Pastry flour	**364 g**	**12.85 oz**	**24.29%**
Baking powder	**4 g**	**.12 oz**	**.23%**
Ground cinnamon	**5 g**	**.18 oz**	**.34%**
Crème fraîche	**82 g**	**2.89 oz**	**5.47%**
APPLE BUTTER			
Granny Smith apples	**1.16 kg**	**2 lb 9.12 oz**	**66.62%**
Butter	**117 g**	**4.11 oz**	**6.66%**
Sugar	**350 g**	**12.34 oz**	**19.99%**
Maple sugar	**117 g**	**4.11 oz**	**6.66%**
Salt	**1 g**	**.04 oz**	**.07%**
Cinnamon sticks	**7**	**7**	
Tahitian vanilla pods, split and scraped	**3**	**3**	
APPLEJACK GLAZE			
Applejack	**200 g**	**7.05 oz**	**15.27%**
Confectioners' sugar	**900 g**	**1 lb 15.68 oz**	**68.7%**
Heavy cream	**200 g**	**7.05 oz**	**15.27%**
Lemon juice	**10 g**	**.35 oz**	**.76%**
Danish Dough (page 53), **semi-frozen**	**5 kg**	**11 lb .32 oz**	
Apricot Glaze (page 49), **warm**	**as needed**	**as needed**	
Caramel (page 446)	**1 kg**	**2 lb 3.27 oz**	
Candied Apples (pages 81-82)	**500 g**	**1 lb 1.64 oz**	
Edible gold leaf	**1 sheet**	**1 sheet**	

1. **FOR THE POUND CAKE:** Follow the creaming method on page 76; add the cinnamon with the dry ingredients. Then add the crème fraîche. Once the batter is made, pour it into a piping bag if using soon. Otherwise, reserve in an airtight container in the refrigerator. Discard after 5 days.

2. **FOR THE APPLE BUTTER:** Coarsely chop the apples into about 8 pieces each and place all of the pieces, as well as the seeds, stems, and cores, in a 4-qt sauce pot. Dice the butter and add it to the apples. Place the remaining apple butter ingredients in the pot.

3. Bring the mixture to a boil over high heat, and then turn the heat down to medium low. If the apples begin to scorch, turn the heat down to low, stirring the pot every few minutes to ensure there is no scorching.

4. Cook until all the apples have cooked through and turned brown, about 3 hours. The mixture will look almost like a paste, and there will be no discernible pieces of apple. Remove the vanilla pods.

5. While the apple butter is still warm, pass it through a ricer or a drum sieve. The ricer is better because the mixture is hot, and a ricer will lessen the chance of burns. If using a drum sieve, use gloves and a bowl scraper to push the apples through. Let the apple butter cool to room temperature in a hotel pan covered with plastic wrap. Once cool, transfer to an airtight container and refrigerate. The apple butter will keep for up to 3 weeks in the refrigerator.

6. **FOR THE GLAZE:** Whisk all of the ingredients in a bowl until thoroughly combined. Adjust the texture if necessary; it should be thick like warm pouring fondant.

7. **FOR THE ASSEMBLY:** Sheet the semi-frozen dough to 7 mm/.3 in. Return the dough to the freezer for 45 minutes or until it is semi-frozen again.

8. Meanwhile, spray 40 tart rings with nonstick oil spray and place them on sheet pans (10 per sheet pan).

9. Cut the dough out using a 9-cm/3.6-in ring cutter. Cut a 4-cm-/1.6-in-long slit down the middle of each disc. Using your thumbs, push out on the discs through the slit, so it looks like an open mouth.

10. Place inside the prepared tart shells. Pipe about 30 g/1.06 oz of pound cake batter inside the opening of each Danish. Wrap the sheet pans loosely and let the pastries retard overnight in the refrigerator.

11. **TO FINISH:** Proof the Danish for 45 minutes to 1 hour at 27°C/80°F with 80 to 90 percent relative humidity.

12. Heat a convection oven to 226°C/440°F. Load the oven and press the steam button for 3 seconds. Once the steam button has been pressed, set the temperature to 185°C/365°F.

13. On the onset of color, open the vent. This helps develop a flaky crust and a deep golden brown color. Bake until the Danish achieve a deep brown golden color, 8 to 12 minutes depending on the oven. Remove the Danish from the oven and slide the parchment paper and Danish onto a sheet pan fitted with a cooling rack or onto a metro shelf. While the pastries cool, brush them with hot apricot glaze.

14. Once they have cooled, fill a piping bag fitted with a Bismarck piping tip or other thin, long tip with the caramel. Using the tip, make a hole on the top of the Danish and pipe about 25 g/.88 oz into each Danish. Fill another piping bag with the apple butter and pipe 25 g/.88 oz into the same hole used to pipe in the caramel.

15. Drizzle the applejack glaze on one side of each Danish.

16. Using a spoon, place 10 g/.35 oz of candied apples on top of each Danish.

17. Garnish with a fleck of gold leaf.

PINEAPPLE JAM, COCONUT GANACHE, AND DARK RUM GLAZE DANISH

yield: about 40 pieces

INGREDIENT	METRIC	U.S.	%
COCONUT POUND CAKE			
Butter	**351 g**	**12.37 oz**	**23.37%**
Sugar	**368 g**	**12.98 oz**	**24.54%**
Eggs	**281 g**	**9.9 oz**	**18.7%**
Salt	**6 g**	**.22 oz**	**.41%**
Pastry flour	**351 g**	**12.37 oz**	**23.37%**
Baking powder	**3 g**	**.12 oz**	**.22%**
Crème fraîche	**79 g**	**2.78 oz**	**5.26%**
Shredded coconut	**62 g**	**2.18 oz**	**4.12%**
PINEAPPLE JAM			
Pineapple, peeled, cored, and finely chopped	**874 g**	**1 lb 14.88 oz**	**69.93%**
Sugar	**350 g**	**12.33 oz**	**27.97%**
Lemon juice	**26 g**	**.93 oz**	**2.1%**
COCONUT–WHITE CHOCOLATE GANACHE			
White chocolate, chopped or in pistoles	**600 g**	**1 lb 5.12 oz**	**60%**
Heavy cream	**200 g**	**7.05 oz**	**20%**
Shredded coconut	**200 g**	**7.05 oz**	**20%**
RUM GLAZE			
Myers's dark rum	**200 g**	**7.05 oz**	**15.27%**
Confectioners' sugar	**900 g**	**1 lb 15.75 oz**	**68.7%**
Heavy cream	**200 g**	**7.05 oz**	**15.27%**
Lemon juice	**10 g**	**.35 oz**	**.76%**
CANDIED PINEAPPLE			
Pineapple, peeled	**1**	**1**	
Sugar	**1 kg**	**2 lb 3.2 oz**	
Candied macadamia nuts	**400 g**	**14.11 oz**	
Danish Dough (page 53), **semi-frozen**	**5 kg**	**11 lb .32 oz**	
Apricot Glaze (page 49), **warm**	**as needed**	**as needed**	
Shredded coconut	**as needed**	**as needed**	
Edible gold leaf	**as needed**	**as needed**	

1. **FOR THE COCONUT POUND CAKE:** Follow the creaming method on page 76 with the dry ingredients, and then add the crème fraîche. Add the shredded coconut after the crème fraîche; mix until just combined. If using immediately, pour into a piping bag. Otherwise, refrigerate in an airtight container.

2. **FOR THE PINEAPPLE JAM:** Combine all of the jam ingredients in a 4-qt sauce pot and cook over high heat until it comes to a boil.

3. Turn the heat down to medium and cook, stirring with a wooden spoon every few minutes to prevent it from scorching at the bottom. When the mixture reaches 72° Brix, take it off the heat and pour the jam into a hotel pan.

4. Let it cool to room temperature. After it has cooled, transfer the mixture to an airtight container and refrigerate. The jam will keep for up to 2 months in the refrigerator.

5. **FOR THE COCONUT–WHITE CHOCOLATE GANACHE:** Set up a hot water bath with simmering, not boiling, water.

6. Place the chocolate in a small stainless-steel bowl along with the cream; stir until the chocolate has melted and a homogeneous mass is obtained. Make sure the water does not boil, or it will overheat the chocolate and make it seize. White chocolate tends to thicken when it is overheated.

7. Take the bowl off the heat and stir in the coconut.

8. Transfer to an airtight container and refrigerate. The ganache will keep for up to 2 weeks in the refrigerator. It will need to be pulled out at least 3 hours before it is needed so that it is soft enough to pipe.

9. **FOR THE RUM GLAZE:** Whisk all of the glaze ingredients together in a bowl until thoroughly combined. The glaze should be the consistency of warm pouring fondant. Adjust consistency if needed. If it is too loose, add more sugar; if it is too thick, add more cream or rum. Transfer to a piping bag if using immediately. Otherwise, place the glaze in an airtight container in the refrigerator. The glaze will keep for 2 months in the refrigerator.

10. **FOR THE CANDIED PINEAPPLE:** Cut the pineapple into 1.25-cm/.5-in discs. Cut the pineapple slices using a 7.5-cm/3-in ring cutter to get evenly sized discs. Using a 2.5-cm/1-in ring cutter, remove the core from each disc. Put the sugar in a medium rondeau and make a dry caramel over high heat (see page 446 for the procedure for dry caramel). Once the sugar achieves an amber brown color, add the pineapple slices. Cook them for 4 minutes on each side or until they absorb the caramel color. Spoon the slices onto a silicone paper–lined sheet pan to cool. If not using right away, wrap the sheet pan and place in the refrigerator. Discard after 3 days.

11. **FOR THE CANDIED MACADAMIA NUTS:** Follow the procedure on page 34 for candied macadamia nuts.

12. **FOR THE ASSEMBLY:** Sheet the semi-frozen dough to 10 mm/.4 in thick on a sheeter. Return the dough to the freezer for 45 minutes or until it is semi-frozen again.

13. Cut rectangles 5 by 12.5 cm/2 by 5 in out of the dough using a wheel cutter and a ruler or guide. Cut a slit down the middle of each rectangle, starting 2.5 cm/1 in from the top and ending 2.5 cm/1 in from the bottom.

14. Open the rectangle from the slit outward, so that it looks like an open mouth. Place 12 Danish on each sheet pan. Pipe about 30 g/1.06 oz of coconut pound cake batter down the center of each Danish, inside the opening. Wrap each sheet pan loosely and retard overnight in the refrigerator.

15. **TO FINISH:** Proof the Danish for 1½ to 2 hours at 27°C/80°F with 80 to 90 percent relative humidity.

16. Heat a convection oven to 226°C/440°F. Load the oven and press the steam button for 3 seconds. Once the steam button has been pressed, set the temperature to 185°C/365°F.

17. On the onset of color, open the vent. This helps develop a flaky crust and a deep golden brown color. Bake until the Danish achieve a deep brown golden color, 8 to 12 minutes depending on the oven. Remove the Danish from the oven and slide the parchment paper and Danish onto a sheet pan fitted with a cooling rack or onto a metro shelf. While the pastries cool, brush them with hot apricot glaze.

18. Once they have cooled, put the pineapple jam in a piping bag fitted with a Bismarck tip or other long, thin piping tip. Insert the tip through the slit and pipe about 30 g/1.05 oz of jam inside each Danish. Repeat this procedure with the ganache, piping into the same slit as the jam.

19. Pipe the rum glaze widthwise across the middle of the Danish from one end to the other in a semi-wide strand, about 1 cm/.4 in wide. Sprinkle shredded coconut on top of the glaze before it sets; when it dries it will not adhere. Cut a pineapple disc into quarters and place one quarter on top of the Danish. Place a candied macadamia nut on top of the pineapple and a fleck of the gold leaf on top of the candied nut.

FIG JAM, ROASTED FIG, STONE PINE LIQUEUR GLAZE, AND TOASTED ALMOND DANISH

yield: about 40 pieces

INGREDIENT	METRIC	U.S.	%
VANILLA POUND CAKE			
Butter	290 g	10.23 oz	24.17%
Sugar	305 g	10.74 oz	25.38%
Eggs	232 g	8.19 oz	19.34%
Salt	5 g	.18 oz	.43%
Pastry flour	290 g	10.23 oz	24.17%
Baking powder	3 g	.1 oz	.23%
Crème fraîche	65 g	2.3 oz	5.44%
Vanilla paste	10 g	.36 oz	.85%
FIG JAM			
Black Mission figs, ends trimmed	1.2 kg	2 lb 10.4 oz	48.98%
Sugar	1.2 kg	2 lb 10.4 oz	48.98%
Lemon juice	50 g	1.76 oz	2.04%
ROASTED FIGS			
Zirbenz Stone Pine liqueur	750 g	1 lb 10.4 oz	48.39%
Sugar	800 g	1 lb 12.16 oz	51.61%
Cinnamon sticks	5	5	
Tahitian vanilla pods, split and scraped	2	2	
Black Mission figs, ends trimmed and cut in half lengthwise	20	20	
PINE LIQUEUR GLAZE			
Zirbenz Stone Pine liqueur	200 g	7.05 oz	16.53%
Confectioners' sugar	900 g	1 lb 15.75 oz	74.38%
Heavy cream	100 g	3.53 oz	8.26%
Lemon juice	10 g	.35 oz	.83%
Danish Dough (page 53), **semi-frozen**	5 kg	11 lb .32 oz	
Apricot Glaze (page 49), **warm**	as needed	as needed	
Toasted sliced almonds	200 g	7.05 oz	
Silver dragées	100 g	3.53 oz	

1. **FOR THE POUND CAKE:** Follow the creaming method on page 76. Add the vanilla paste with the crème fraîche. Transfer to a piping bag if using immediately. Otherwise, reserve the batter in an airtight container in the refrigerator. Discard after 5 days.

2. **FOR THE FIG JAM:** Combine all of the jam ingredients in a sauce pot and bring to a boil over high heat, stirring frequently. Turn the heat down to medium-low and cook until the mixture reaches 65° Brix. Test the jam with a refractometer.

3. Cool the jam in a hotel pan over an ice bath. Once it has cooled down, transfer it to a piping bag fitted with a Bismarck tip or other long, thin piping tip if using soon. Otherwise, transfer it to an airtight container and refrigerate. It will keep for up to 1 month in the refrigerator.

4. **FOR THE ROASTED FIGS:** Combine the Stone Pine liqueur, sugar, cinnamon sticks, and vanilla pods and beans in a sauce pot and bring to a boil over high heat. Turn the heat down to medium. Continue to cook until the liquid is reduced by half. Remove the pan from the heat and remove the cinnamon sticks and vanilla pods.

5. Preheat a convection oven to 160°C/320°F.

6. Pour the reduced liquid into a hotel pan. Place the halved figs into the hotel pan, cut side down. Roast until tender, about 7 minutes. Once they are cooked, transfer them onto a sheet pan lined with silicone paper or a nonstick rubber mat and cool in the refrigerator. Reserve the cooking liquid at room temperature in an airtight container. It will keep for up to 2 months, since it has such a high sugar concentration. The consistency should be that of a thick glaze.

7. **FOR THE PINE LIQUEUR GLAZE:** Whisk all of the glaze ingredients together in a bowl until thoroughly combined. Adjust the consistency if necessary. If it is too thick, add more heavy cream; if it is too thin, add more confectioners' sugar. It should have the consistency of warm pouring fondant. If using soon, transfer to a piping bag with no tip and reserve at room temperature. Otherwise, transfer to an airtight container and refrigerate. It will keep for up to 1 month in the refrigerator.

8. **TO ASSEMBLE:** Sheet the semi-frozen dough to 10 mm/.4 in thick on a sheeter. Return the dough to the freezer for 45 minutes or until it is semi-frozen again.

9. Cut rectangles 5 by 12.5 cm/2 by 5 in using a wheel cutter and a ruler or guide. Cut a slit down the middle of each rectangle, starting 2.5 cm/1 in from the top and ending 2.5 cm/1 in from the bottom.

10. Open up the rectangle from the slit outward, so that it looks like an open mouth. Take the top end and twist it inward, toward the center of the Danish. It should look like a heart. Place 10 pieces on each sheet pan. Pipe about 30 g/1.06 oz of vanilla pound cake batter down the center of each Danish, inside the opening. Wrap each sheet pan loosely and retard the Danish overnight in the refrigerator.

11. Proof the Danish for 1½ to 2 hours at 27°C/80°F with 80 to 90 percent relative humidity.

12. Heat a convection oven to 226°C/440°F. Load the oven and press the steam button for 3 seconds. Once the steam button has been pressed, set the temperature to 185°C/365°F.

13. On the onset of color, open the vent. This helps develop a flaky crust and a deep golden brown color. Bake until the Danish achieve a deep brown golden color, 8 to 12 minutes depending on the oven. Remove the Danish from the oven and slide the parchment paper and Danish onto a sheet pan fitted with a cooling rack or onto a metro shelf. While the pastries cool, brush them with hot apricot glaze.

14. Once they have cooled, pipe the fig jam into the Danish. Insert the tip through the slit and pipe about 30 g/1.05 oz of jam inside each Danish. Pipe a straight line of pine tree glaze widthwise across the center of the Danish from end to end. Place about 10 g/.35 oz of sliced almonds across the center of the Danish on top of the stone pine glaze before it sets; otherwise they will not adhere. Spoon about 15 g/.52 oz of the fig roasting liquid onto the front end of the Danish. It should be thick enough to cling to the Danish and not slide off. Sprinkle about 2 g/.07 oz of silver dragées onto the glaze. Place a single roasted fig half on top of the Danish.

laminated brioche

Laminated brioche brings together delicate, soft brioche with the flaky crispness of laminated pastries. The end result is not quite a brioche and not quite a laminated pastry. It is, in fact, a whole different pastry with many possibilities.

When we laminate croissant dough, we take a dough with little gluten development and develop that gluten through lamination (turns and folds). When laminating brioche, we start the process with dough that has full gluten development. This in itself makes it much easier to handle than croissant dough, since brioche will be more elastic and pliable.

A laminated brioche is one of the most decadent and richest pastries out there. The dough itself contains about 50 percent butter (in relation to 100 percent bread flour), and more butter will be added in the form of a butter block, which is 33 percent of the total weight of the dough. This will result in an extremely flaky pastry with a very moist interior.

LAMINATED BRIOCHE

yield: **5 kg/11 lb .32oz**

INGREDIENT	METRIC	U.S.	%
Brioche Dough (page 10)	**3.76 kg**	**8 lb 4.64 oz**	**75.19%**
Butter block	**1.24 kg**	**2 lb 11.84 oz**	**24.81%**

1. See the procedures for butter blocks on page 40 and croissant lamination on page 44. All the principles are the same.

2. Follow the procedures for proofing on page 48 and baking on page 49.

note The most important thing to keep in mind is that brioche is a fully developed dough with gluten at its maximum development. It is much stronger and therefore more forgiving than croissant dough, but it is also harder to manage; since the gluten is already so strong, the dough tends to pull back much more after being rolled out. To correct this, simply relax the dough as much as possible while sheeting it and between folds.

FLEUR DE SEL, ROASTED GARLIC, SAGE, AND PECORINO TARTUFO BRIOCHE

yield: about 40 pieces

INGREDIENT	METRIC	U.S.
ROASTED GARLIC		
Garlic heads	**4**	**4**
Olive oil	**200 g**	**7.05 oz**
FRIED SAGE LEAVES		
Canola oil	**500 g**	**1 lb 1.6 oz**
Sage leaves	**40**	**40**
Laminated Brioche (page 71), **semi-frozen**	**5 kg**	**11 lb .32 oz**
Pecorino Tartufo, grated with a rasp	**926 g**	**2 lb .64 oz**
Fleur de sel	**74 g**	**2.61 oz**

1. **FOR THE ROASTED GARLIC:** Cut off the top of each garlic head to expose all of the cloves. Place the heads in a half hotel pan and drizzle them with the olive oil. Roast in a 200°C/392°F deck oven for about 30 minutes or until the garlic cloves have turned golden brown.

2. Let the heads cool to room temperature in the roasting pan. Once cooled, peel the skin off the cloves; it should come off easily. Reserve at room temperature. Refrigerate if not using soon. Discard after 2 days.

3. **FOR THE FRIED SAGE:** Heat the canola oil to 180°C/356°F in a 4-qt sauce pot. Fry 5 leaves at a time until crispy, about 1 minute. Discard after 24 hours.

4. Place 40 mini panettone molds on 2 sheet pans (see Resources, page 540). Space them evenly.

5. Sheet the semi-frozen dough to 5 mm/.2 in. Cut widthwise into 3 evenly sized sheets and return to the freezer for about 45 minutes or until the dough is semi-frozen. Cut it into 40-cm-/16-in-wide sheets (they should already be the length of a sheet of parchment paper from the original sheeting), using a Plexiglas guide and a wheel cutter.

6. Sprinkle the cheese over the entire surface of all 3 sheets of laminated brioche dough in an even layer.

7. Roll the sheets up away from you. Trim an end off of each roll, and cut each one into 5-cm-/2-in-thick pieces. Place each piece inside a mini panettone mold.

8. Follow the proofing instructions for Danish on page 48.

9. Preheat the convection oven to 175°C/350°F.

10. Before baking, sprinkle a pinch (about 2 g/.07 oz) of fleur de sel on top of each proofed laminated brioche and insert 1 roasted garlic clove into each piece, at the center of the spiral.

11. Bake until the internal temperature of the brioche is 95°C/203°F, 10 to 13 minutes. Once cooled, tear the paper off and insert a fried sage leaf next to the garlic clove.

notes Pecorino Tartufo is an Italian sheep's milk hard cheese from the Umbria region that has black truffle trimmings added to it, which infuse their flavor to create a unique cheese.

The ratio of dough to garnish is not the usual 60 percent to 40 percent in this recipe (it is 80 percent to 20 percent), because if there were any more cheese it would weigh the brioche down too much.

SLOW-POACHED QUINCE AND CURRANT BRIOCHE

yield: about 40 pieces

INGREDIENT	METRIC	U.S.
SLOW-POACHED QUINCE AND CURRANTS		
Quince, large, peeled	**40**	**40**
Dried currants	**300 g**	**10.58 oz**
Water	**2 kg**	**4 lb 6.4 oz**
Elderflower liqueur (St-Germain)	**1 kg**	**2 lb 3.2 oz**
Sugar	**2 kg**	**4 lb 6.4 oz**
Cinnamon sticks	**10**	**10**
Orange zest	**3 oranges**	**3 oranges**
Vanilla pods	**2**	**2**
Cloves	**5**	**5**
Laminated Brioche (page 71), **semi-frozen**	**5 kg**	**11 lb .32 oz**

1. **FOR THE SLOW-POACHED QUINCE AND CURRANTS:** In a medium sauce pot, combine all of the ingredients. Cover with a clean kitchen towel and place over medium-low heat.

2. Cook until the quince are tender and a skewer slides through them with little resistance.

3. Remove from the heat and allow to cool to room temperature. Remove the cinnamon sticks, vanilla pods, and cloves.

4. Cut the quince into quarters and remove the cores. Cut into an even medium dice and return to the liquid.

5. Transfer to an airtight container and reserve in the refrigerator. The quince can keep for up to 1 week in the refrigerator.

6. **FOR THE ASSEMBLY:** Remove the required 1.8 kg/3 lb 15.36 oz of diced quince and poached currants from their poaching liquid. Pat them dry between sheets of paper towels.

7. Sheet the semi-frozen dough to 5 mm/.2 in thick on a sheeter. Divide the dough widthwise into 3 evenly sized sheet, using a wheel cutter. If you have a sheet of dough this long, you will cut it into 3 same-sized pieces. Return the dough to the freezer for 45 minutes or until it is semi-frozen again.

8. Distribute equal parts of the quince-currant mixture in a single layer on each sheet of dough.

9. Roll each laminated brioche sheet up to form an even roll. Don't roll it too tight; otherwise the brioche will "telescope" when it bakes; it will shoot out from the center of the mold and look like a telescope. Trim one of the ends off of each roll, and cut each one into 2.5-cm/1-in-thick pieces. Place each piece inside a paper baking mold that measures 9 cm/3.6 in diameter and 2.5 cm/1 in deep (see Resources, page 540).

10. **TO FINISH:** Follow the proofing instructions for Danish on page 48.

11. Preheat the convection oven to 175°C/350°F.

12. Bake until the brioche takes on a dark amber brown color, 10 to 12 minutes.

note The weight of the currants will increase because they will hydrate once they are cooked. The yield is the resulting drained mass; it does not include the cooking liquid, since it is not an actual part of the brioche. Save this liquid for future use. The flavor will continue to improve as it is stored.

MANCHEGO CHEESE AND SERRANO BRIOCHE

yield: **45 to 50 pieces**

INGREDIENT	METRIC	U.S.	%
Laminated Brioche (page 71), **semi-frozen**	**5 kg**	**11 lb .32 oz**	
Serrano ham, thinly sliced	**1.6 kg**	**3 lb 8.48 oz**	**80%**
Sage leaves, small	**45 to 50**	**45 to 50**	
Manchego, grated finely on a rasp	**400 g**	**14.11 oz**	**20%**
Egg Wash for Brushing (page 13)	**as needed**	**as needed**	

1. Line 5 sheet pans with silicone paper.

2. Cut the laminated brioche dough as for pain au chocolat into rectangles 8.75 by 12.5 cm/ 3.5 by 5 in using a Plexiglas guide and a wheel cutter.

3. The rectangles should be placed with the short sides facing you, right next to each other. Do not separate them after cutting them or brushing the egg wash on them. Brush the top half of the rectangles with the egg wash.

4. Place a few slices of Serrano ham widthwise on top of each rectangle (about 80 g/2.8 oz per rectangle of dough).

5. Roll up the dough away from you, but not too tightly, and place on a silicone paper–lined sheet pan. Make sure the seam is directly at the middle-bottom of the brioche. Press down gently with your fingertips. Repeat until all the pieces have been shaped, then brush with egg wash and proof, or wrap and refrigerate or freeze.

6. **TO FINISH:** See the instructions for proofing laminated pastries on page 44. When the brioche is done proofing and the last layer of egg wash has been applied, place a small leaf of sage on top of the proofed dough, and then sprinkle about 20 g/.7 oz of the grated cheese on top.

7. Bake as for Danish, following the baking instructions on page 49.

note This will exceed the recommended ratio of 60 percent dough to 40 percent garnish by 10 percent, but if you are already splurging on the butter, why not splurge on the Serrano too?

chemically leavened breakfast pastries (quick breads)

Chemically leavened breakfast pastries are also known as "quick breads" because they can be made quickly and you don't have to wait for the yeast to proof the dough. The type of leavening agent is the way in which they differ from what we have covered so far in that they are raised chemically by baking powder and/or baking soda, and not biologically by yeast. Structurally, chemically leavened products are completely different from yeast-risen products, not only because of the leavener used, but also because chemically leavened products are typically not mixed long enough to develop any gluten, while yeast leavened doughs are mixed long enough. This will have a dramatic difference on the end product, not only in the crumb but also in the crust and the texture of the finished product.

CREAMED BUTTER BATTERS (Pound Cakes)

The method used to make pound cakes is known as the creaming method. It begins with softening the butter by paddling it with the sugar. This first step helps the sugar to dissolve, the eggs to incorporate more readily, and the dry ingredients to be distributed evenly. The butter must be soft so that it mixes easily with tempered eggs; it would be very complicated to combine hard butter with eggs. The process is quick: Once the butter and sugar have been creamed to the correct consistency (fluffy) and the eggs have been added, the dry ingredients are mixed only until just incorporated and a homogeneous mass has been formed. It is at this point that overmixing can develop unwanted gluten and produce a tough final product.

The method principles are as follows:

1. Scale out the ingredients. Make sure to use a fine-grain sugar such as superfine or bakers' sugar. It will dissolve more readily in the butter than larger crystal sugars. Combine the flour with the leaveners and salt, and if there is a powdered flavor such as ground spices, combine it with these ingredients. Sift them twice, preferably, and right before they are needed. If they are sifted an hour or a day before using, they might clump up again. The purpose of sifting is threefold: It gets rid of any solid clumps that may make their way into the batter; it aerates the dry ingredients, making them lighter and therefore easier to incorporate into the batter; and finally, it causes the ingredients to combine into a homogeneous mass.
2. Prepare the baking pans by greasing them with a nonstick oil spray. Paper pan liners can be used as well, but a well-seasoned pan won't need them.
3. Cut the butter into medium dice and bring it up to 21°C/70° by leaving it at room temperature for a couple of hours, depending on the temperature of the bakeshop. Try to keep it close to the desired temperature. If it is too hot in the bakeshop, keep the butter refrigerated until 30 minutes before it is needed and then pull it out to warm up. If it is too cold in the shop, keep the butter close (but not too close) to a heat source, such as a stovetop or oven. The butter needs to be pliable, not melted or too soft.
4. Warm the eggs up to the same temperature as the butter. Crack the eggs into a bowl over a slightly warm water bath 30 minutes before using. Always take their temperature just before using to get the most accurate read. Whisk the eggs slightly to create a uniform mass, which will make it easier for the butter to combine with the eggs.
5. Place the butter and sugar in the bowl of an electric mixer and mix on medium speed using the paddle attachment. If the butter is at the right temperature, it will become soft, white in color, and fluffy within a few minutes of mixing. This is where many bakers make the mistake of overmixing their butter. Two events are occurring while the butter and sugar are mixing: The sugar is dissolving into the butter and the butter is trapping air, which will result in better leavening and an even crumb. If too much air is trapped, there will not be enough structure from the flour and egg proteins in the batter to hold that much air, and the pound cake will collapse. Keep in mind that mixing a pound cake is different in a 5-qt, 12-qt, 20-qt, or 40-qt mixer. Don't go by how long it takes to cream the butter (the larger the bowl, the longer it will take); go by how it looks, which should be fluffy, light, and white.
6. Add the eggs in 4 additions. After every addition, stop the machine, drop the bowl, and scrape the bowl and paddle with a rubber spatula. If the mixture looks separated by the time the last of the eggs has been added, it means the emulsion is broken. The reason for this is that one of the

ingredients (the eggs or the butter) was at the wrong temperature. Some bakers say that it's not a big deal because when the flour is added, the emulsion comes back together. This is not true. At a glance it might look fine, like nothing happened, but when the pound cake is baked, it will have a greasy-oily feel, which is precisely because of all the fat that separated from the eggs.

7. Once all the eggs have been added and there is a smooth emulsion, add the flour mixture in 2 additions. After the first addition, pulse the machine so that the flour doesn't go everywhere. Immediately after the first addition is incorporated, stop the machine, drop the bowl, and scrape the bowl and paddle with a rubber spatula. Add the remaining flour mixture and mix until just incorporated. Stop the machine, drop the bowl, and scrape the bowl and paddle with a rubber spatula again. Mix for 2 or 3 more seconds. Be careful not to overmix.
8. It is at this point that solid garnishes are added (see Notes). There are many options available for garnishes. The key is to add them right at the end and then to mix the batter just long enough so that the garnish is evenly dispersed, which should take no more than a few seconds. Do not add more than 250 g/8.8 oz of solid garnish per 800-g/1-lb 12-oz loaf. Otherwise, the garnish will weigh down the batter, it will not form a crown, and it will have a very tight and dense crumb.
9. Once the batter has been made, scale out the desired weight and pour into the prepared baking or loaf pans. It is important that they be the same weight so that they bake at the same time.
10. Preheat a convection oven to 175°C/350°F.
11. Place the pans in the oven. After 20 minutes, when the crust starts to form on top of the pound cake, cut a straight line through the crust with a razor blade. This will help the pound cake form a nice, even crown, with a straight slit right down the middle. A properly made pound cake will form a good crown as it bakes either way, but the razor cut makes it look slightly better.
12. After 10 minutes, drop the temperature to 160°C/325°F. Bake for 20 more minutes, then drop the temperature to 150°C/300°F, and bake for about 20 more minutes or until the cake springs back at the center of the crown when gentle fingertip pressure is applied. The intent of all of these different temperatures is to at first achieve a tall crown and maintain it, then to assure that the pound cake gets completely baked through without drying out or burning the crust. It is acceptable to insert a thin skewer through the pound cake to check whether it is baked all the way (it will come out dry if it is), but this will leave a hole in the final product. Check for doneness with your fingertips; if it springs back at the center of the crown, it is done.

notes If adding nuts, toast them before adding them to the batter, since they will be trapped by the batter for the most part (unless they are on the surface) and won't get toasted while baking.

If adding any other garnish, such as dried fruit, candied fruit, or candied citrus zest, toss it in bread flour before adding it to the batter. This will help keep the pieces uniformly dispersed throughout the batter; otherwise they tend to sink to the bottom of the pan. Using fresh fruit such as berries will release a large amount of moisture when they are baked into the pound cake. This will give the finished product a wet feel, and it keeps the batter from baking properly since there is so much moisture present. Some berries explode into the batter, creating large gaps of air, and other berries such as raspberries turn some batters green when they come into contact with baking powder.

If adding a very lightweight garnish such as lemon zest, add it with the butter and sugar when they are first being creamed.

If using cocoa powder, combine it with the flour and the leavener, and then sift them together so that they can be added to the batter together.

The pound cake in this book calls for crème fraîche, which also needs to be brought up to 21°C/70°F, then added at the very end and quickly mixed in. It is intended to give flavor and to tenderize the product, as well as to help hydrate and react with the baking powder to leaven the batter (an acidic liquid; see ingredients, page 4).

savory breakfast pastries

KNOW THIS: Savory breakfast pastries will be some of your top-selling items. The reason it is so important to know this is that sometimes as bakers or pastry chefs we lose sight of the savory world and its possibilities in the bakeshop. Not every one of your customers has a sweet tooth, and not all of them will always want something sweet for breakfast. A lot of people would much rather have a plate of scrambled eggs than a doughnut for breakfast. The problem is that not everyone has the time to sit down and wait for those eggs to be made. But you can order a savory scone and a glass of orange juice and be on your way.

In every bakeshop I have worked in, at least 10 to 15 percent of the product mix sold has been savory, and they consistently rank among the top-ten sellers.

A few ideas for savory breakfast pastries:

Savory scones: For the recipe on page 100, reduce the sugar by half and use the same percentage of garnish as for a sweet scone. Some possible examples are Cheddar and bacon, chorizo and manchego, and caramelized shallots and Parmesan.

Brioche: The recipe on page 10 stays the same. Some possible examples are Brie and spinach turnovers (brush the tops with egg wash and sprinkle sesame seeds on top), olive and goat cheese mini pizzas (cut out rounds of brioche and top with sliced, pitted black olives and crumbled goat cheese), and mushroom and Stilton tarts (line a mini pie tin with brioche and sautéed mushrooms, and top with cheese).

Laminated brioche: See the items on pages 72 and 75.

It is a good idea to invest in a commercial toaster with a conveyor belt–like system, since many people enjoy their pastries toasted, and not only savory items but sweet ones as well. One of the best things to eat, at least in my opinion, is a warm croissant with butter and jam, or a hot biscuit with some butter and marmalade.

Always keep in mind that whatever you put into the savory pastries must be shelf stable.

possible defects of chemically leavened pastries

defect	cause(s)	solution (the appropriate steps need to be taken beforehand)
No crown	Oven temperature was too low.	Make sure the oven is at the right temperature when loading it.
	Batter was overmixed.	Do not overmix the batter; it should be mixed until it comes together and forms a homogeneous mass.
	Butter was overcreamed (too much air was incorporated). It will form a large crown when it is baking, but when it cools off, the crown collapses; there wasn't enough structure in the batter to support so much air.	Do not overcream the butter. It should only be mixed until it is light and fluffy in the case of the creaming method.
	Insufficient leavener.	Weigh out the ingredients accurately.
Grainy-looking surface	This occurs with granulated sugar. Use sugars with smaller crystals such as bakers' sugar or superfine sugar, which dissolve easily and quickly into the batter.	Use a smaller size of sugar crystal.
Tunnels throughout the crumb	The batter was overmixed, which in turn caused excess gluten development. When the leavener was activated through heat, the gas that it produced had to push its way through the batter to come out, thus creating the tunnels. Overmixed batters tend to not be as light as properly mixed batters.	Mix the batter until ingredients are just incorporated and become a homogeneous mass.
Greasy- or wet-looking crumb	The emulsion was not properly made. One of the ingredients was not at the right temperature, which makes it impossible to create a proper emulsion.	Add the ingredients in the right order and at the correct temperature.
Thick crust	Pastry was overbaked.	Bake until just done. Test the product when you think it is almost ready.
Dip in the center of the crown	Pastry was underbaked; might be raw down the middle.	Bake until just done. Test the product when you think it is almost ready.
Muffin overflowed (looks like magma rippling around the muffin)	Usually the culprit is a chunk of butter or a sugar bomb (a sugar cluster) that was not completely incorporated into the batter.	Make sure all of the ingredients are homogeneously mixed.
	It may also be that there was too much batter inside the baking cup.	Pour the same amount of batter into each pan or baking cup. Weighing them out helps with consistency.
Flour pockets throughout the crumb	Dry ingredients were not sifted.	Make sure all of the ingredients are homogeneously mixed.
	Dry ingredients were not mixed in all the way.	

BASIC POUND CAKE RECIPE

yield: 3 kg/6 lb 9.76 oz

INGREDIENT	METRIC	U.S.	%
Pastry flour	**733 g**	**1 lb 9.76 oz**	**24.38%**
Baking powder	**7 g**	**.24 oz**	**.23%**
Salt	**13 g**	**.46 oz**	**.43%**
Butter	**733 g**	**1 lb 9.76 oz**	**24.38%**
Eggs	**587 g**	**1 lb 4.64 oz**	**19.51%**
Superfine or bakers' sugar	**770 g**	**1 lb 11.04 oz**	**25.6%**
Crème fraîche, at 21°C/70°F	**165 g**	**5.8 oz**	**5.48%**

1. Combine the flour with the baking powder and salt. Sift them twice, preferably right before they are needed.

2. Prepare the baking pans by greasing them with a nonstick oil spray. Paper pan liners can be used as well, but a well-seasoned pan won't need them.

3. Cut the butter into medium dice and bring it up to 21°C/70°F by leaving it at room temperature for a couple of hours, depending on the temperature of the bakeshop. The butter needs to be pliable, not melted or too soft.

4. Warm the eggs to the same temperature as the butter. Crack the eggs into a bowl over a slightly warm water bath 30 minutes before using. Whisk the eggs slightly to create a uniform mass.

5. Place the butter and sugar in the bowl of an electric mixer and mix on medium speed using the paddle attachment. If the butter is at the right temperature, it will become soft, white in color, and fluffy within a few minutes of mixing.

6. Add the eggs in 4 additions. After every addition, stop the machine, drop the bowl, and scrape the bowl and paddle with a rubber spatula.

7. Once all the eggs have been added and there is a smooth emulsion, add the flour in 2 additions. After the first addition, pulse the machine so that the flour doesn't go everywhere. Immediately after the first addition is incorporated, stop the machine, drop the bowl, and scrape the bowl and paddle with a rubber spatula. Add the remaining flour and mix until just incorporated. Stop the machine, drop the bowl, and scrape the bowl and paddle with a rubber spatula again. Mix for 2 or 3 more seconds. Be careful to not overmix.

8. Add the crème fraîche and gently but quickly mix it in.

9. Lightly grease 3 half tube molds (also known as terrine molds) that are 7.5 by 22.5 by 7.5 cm/3 by 9 by 3 in (see Resources, page 540). Brush the molds with softened butter, and then coat them with a light layer of bread flour. Tap the excess off. Each mold should be filled with 1 kg/2 lb 3.2 oz of batter.

10. Preheat a convection oven to 175°C/350°F.

11. Place the filled molds in the oven. After 20 minutes, when the crust starts to form on top of the pound cake, cut a straight line through the crust with a razor blade.

12. After 10 more minutes, drop the temperature to 160°C/325°F. Bake for 20 more minutes, then drop the temperature to 150°C/300°F, and bake for about 20 more minutes or until it springs back at the center of the crown when gentle fingertip pressure is applied.

13. Cool to room temperature, and then trim the crown off using a serrated knife. This will be the base and therefore needs to be flat.

CINNAMON POUND CAKE WITH CANDIED APPLES, CINNAMON GLAZE, AND OATMEAL STREUSEL

yield: 3 cakes

INGREDIENT	METRIC	U.S.
CANDIED APPLES		
Sugar	**908 g**	**2 lb**
Water	**272 g**	**9.59 oz**
Lemon juice	**20 g**	**.72 oz**
Granny Smith apples, peeled and cut into medium dice	**400 g**	**14.11 oz**
OATMEAL STREUSEL		
Butter, at 21°C/70°F	**160 g**	**5.64 oz**
Sugar	**160 g**	**5.64 oz**
Pastry flour	**160 g**	**5.64 oz**
Old-fashioned oats	**112 g**	**3.95 oz**
Salt	**2 g**	**.08 oz**
Ground cinnamon	**3 g**	**.11 oz**
Vanilla powder	**3 g**	**.11 oz**
CINNAMON POUND CAKE BATTER		
Basic Pound Cake Batter (page 80)	**3 kg**	**6 lb 9.76 oz**
Ground cinnamon	**5 g**	**.18 oz**
Candied Apples	**500 g**	**1 lb 1.6 oz**
APPLEJACK SOAKING LIQUID		
Applejack	**108 g**	**3.81 oz**
Simple syrup	**432 g**	**15.24 oz**
APPLEJACK GLAZE		
Confectioners' sugar	**960 g**	**2 lb 1.92 oz**
Buttermilk	**192 g**	**6.77 oz**
Applejack	**48 g**	**1.69 oz**
GARNISH		
Vanilla pods	**3**	**3**
Cinnamon sticks	**3**	**3**
Star anise	**3**	**3**
Ground cinnamon	**15 g**	**.52 oz**

1. **FOR THE CANDIED APPLES:** Combine the sugar, water, and lemon juice in a 4-qt sauce pot. Stir until the sugar has been completely dissolved.

2. Clean the sides of the pot by brushing them with a wet pastry brush. Cook over high heat. When the sugar starts turning a pale yellow color, add the diced apples, and turn the heat down to medium-low. Cook very slowly until the pectin in the fruit has been activated, and the fruit is translucent and has taken on the caramelized sugar color. The sugar will continue to cook even after the apples have been added, and it will turn a dark brown color; cook until the temperature reaches about 160°C/320°F.

3. Remove the apples from the liquid by scooping them out with a slotted spoon, and then place them in a hotel pan to cool. Once cooled, transfer to an airtight container and refrigerate. The apples will keep for 3 weeks in the refrigerator.

4. **FOR THE OATMEAL STREUSEL:** Preheat a convection oven to 160°C/325°F. Combine the butter and the sugar in an electric mixer bowl. Mix using a paddle attachment on low speed. Continue to mix until a homogeneous mass is obtained.

5. Add the pastry flour and pulse the mixer until all of the flour has been incorporated. Add the oats, salt, cinnamon, and vanilla powder, and pulse until just combined.

6. Rub the streusel through a wire rack to obtain evenly sized morsels of streusel.

7. Bake until golden brown, about 7 minutes. Cool to room temperature.

8. Transfer to an airtight container and reserve for up to 5 days.

9. **FOR THE POUND CAKE:** Combine the cinnamon with the flour, salt, and baking powder for the batter and sift them together twice. Proceed with the batter as directed on page 80.

10. Before adding the candied apples to the batter, toss them in bread flour (just enough to be able to toss them in it). Any excess will be discarded. They are rather sticky, so try to separate them when tossing them in the bread flour so that they do not clump up. Shake off the excess flour by placing the apples on a drum sieve and shaking. Remember, the apples should go in after the dry ingredients have been incorporated, but before the crème fraîche.

11. Divide the batter between three 1-kg/2 lb- 3.2-oz cake molds. The total yield of the recipe will have gone up to 3.4 kg/7 lb 8.09 oz with the addition of the candied apples and the cinnamon. Pour 1.13 kg/2 lb 8.03 oz of batter into each loaf pan. Follow the baking instructions on page 80.

12. **FOR THE APPLEJACK SOAKING LIQUID:** Combine both ingredients in a bowl. Reserve the mixture in an airtight container at room temperature. The soaking liquid will keep indefinitely in these conditions. The sugar might crystallize over time, but the chances of that are slim. If and when that happens, bring the mixture up to a boil over high heat until the crystals dissolve again.

13. Divide the soaking liquid into 3 equal parts (180 g/6.35 oz).

14. Place all the pound cakes on a wire rack. Poke 12 small holes in the crown of each pound cake using a thin skewer.

15. Pour one-third of the divided soaking liquid portion over 1 pound cake, let it absorb, pour another one-third of the liquid over the cake, let it absorb, and then pour the last one-third over the cake. Repeat with the other pound cakes. Leave the loaves on the rack for glazing.

16. **FOR THE APPLEJACK GLAZE:** Combine all of the ingredients in a medium bowl using a whisk. Mix until smooth. You may store the glaze in the refrigerator for up to 1 month, or at room temperature for 5 days. Pour 400 g/14.1 oz over each loaf.

17. Apply one-third of the streusel to the sides of each just-glazed pound cake. If the glaze dries, then the streusel will not stick to it.

18. **TO FINISH THE CAKE:** Once the pound cake is glazed and the sides are coated with the oatmeal streusel, place 1 vanilla pod, 1 cinnamon stick, and 1 piece of star anise on each pound cake. Arrange them so they have height and balance. Sprinkle a pinch of powdered cinnamon across the surface.

19. Finally, if desired, wrap a ribbon around the base of the pound cake. Since this pound cake is soaked and is coated in glaze, it will stay moist and will not dry out quickly. It has a lifespan on the retail shelf of up to 3 days.

notes Although the recipe for candied apples calls for only 400 g/14.11 oz of diced apples, they will increase in weight from cooking, because they absorb a percentage of the sugar in which they are being cooked. This is a form of cooking apples, but also of preserving them, since the water they contain is replaced by sugar. The cooking process, along with the lemon juice, activates the natural pectin in the apples, which give them a gummy, candy-like texture with a very strong and concentrated candied apple taste.

If the apples were cooked too much, they might hold their shape, but the sugar will have turned too hard. Don't throw them out; you can add a little water, which will soften the sugar and the apples. If the apples are mushy, it means they were old and were in storage for too long. At this point, discard them or add them to the apples for Apple Butter (page 65).

Use ripe apples. The best kind of apples to use for candying are those that have a high pectin content and low moisture content, such as Granny Smith, Ginger Gold, and Honeycrisp apples.

LEMON AND POPPY SEED POUND CAKE

yield: **3 cakes**

INGREDIENT	METRIC	U.S.
LEMON POPPY SEED POUND CAKE BATTER		
Lemon zest	**8 lemons**	**8 lemons**
Basic Pound Cake Batter (page 80)	**3 kg**	**6 lb 9.76 oz**
Poppy seeds	**18 g**	**.63 oz**
LEMON SOAKING LIQUID		
Lemon juice	**144 g**	**5.08 oz**
Simple syrup	**576 g**	**1 lb 4.32 oz**
LEMON GLAZE		
Confectioners' sugar	**1.28 kg**	**2 lb 13.2 oz**
Buttermilk	**256 g**	**9.03 oz**
Lemon juice	**64 g**	**2.26 oz**
LEMON CHIPS		
Lemons	**2**	**2**
Simple syrup	**500 g**	**1 lb 1.6 oz**

1. **FOR THE POUND CAKE:** Zest the lemons using a rasp into the mixer bowl that you will use to paddle the sugar and the butter for the pound cake. This will keep all of the oils from the lemon in the bowl. Cream the butter and sugar as per the creaming method in step 5 of the Basic Pound Cake on page 80. Proceed with the recipe on page 80. Add the poppy seeds once all of the dry ingredients have been incorporated but before the crème fraîche is added.

2. Lightly grease 3 half tube molds (also known as terrine molds) that measure 7.5 by 22.5 by 7.5 cm/3 by 9 by 3 in (see Resources, page 540). Brush the molds with softened butter, and then coat them with a light layer of bread flour. Tap the excess off. Each mold should be filled with 1 kg/2 lb 3.2 oz batter.

3. Preheat a convection oven to 175°C/350°F.

4. Place the filled molds in the oven. After 20 minutes, when the crust starts to form on top of the pound cake, cut a straight line through the crust with a razor blade.

5. After 10 minutes, drop the temperature to 160°C/325°F. Bake for 20 more minutes, then drop the temperature to 150°C/300°F, and bake for about 20 more minutes or until the cake springs back at the center of the crown when gentle fingertip pressure is applied. Cool to room temperature, and trim the crown off using a serrated knife. This will be the base and therefore needs to be flat. Flip the pound cake over so that the top is now the bottom.

6. **FOR THE LEMON SOAKING LIQUID:** Combine the lemon juice and simple syrup in a bowl. Transfer to an airtight container and refrigerate. The soaking liquid will keep for up to 5 days. If using right away, divide the liquid into 3 equal parts.

7. Put the 3 loaves on a a wire rack set over a sheet pan lined with parchment paper. Let them reach room temperature, because they cut well when they are cold, but they do not absorb liquids as efficiently.

8. Make 12 even perforations over the surface of each loaf using a thin skewer.

9. Pour one-third of the divided soaking liquid portion over each cake, let it absorb, then pour another one-third of the liquid over the cake, let it absorb, and then apply the last one-third to the cake. Leave the cakes on the rack for glazing.

10. **FOR THE LEMON GLAZE:** Combine all of the ingredients in a bowl. Mix until smooth using a whisk. Reserve refrigerated in an airtight container, or use immediately. The glaze will keep for up to 2 weeks in the refrigerator.

11. Pour the glaze over each pound cake. Try to obtain an even coat on all sides of the loaf by pouring the glaze down the middle and letting it pour down the sides.

12. Before the glaze sets, sprinkle 3 g/.11 oz of poppy seeds down the middle of the loaf in a thin, straight line.

13. **FOR THE LEMON CHIPS:** Freeze the lemons until hard. Fill a medium pot two-thirds full with water and bring to a boil. Slice the lemons very thinly on an electric slicer. Blanch in hot water until the water comes back to a boil. Remove from the pot with a spider and repeat. Place the slices in a hotel pan.

14. Bring the simple syrup to a boil, and pour it over lemon slices so that they are generously coated. Let them absorb the syrup for at least 45 minutes.

15. Place the lemon slices in a dehydrator at 57°C/135°F until dry, about 4 hours. Make sure there are no lemon seeds in the slices. To keep the slices flat, place them on a sheet of silicone paper that is cut to fit inside the dehydrator (see Note).

16. Store the lemon chips in an airtight container at room temperature. The chips will keep for at least 1 week in a cool, dry environment.

17. To garnish the pound cake, place 3 lemon chips in a standing position on top of the cake in a straight line, next to the poppy seeds. If desired, tie a ribbon around the pound cake next to the poppy seeds. Discard after 2 days; the lemon chips can get soggy.

note If you do not have a dehydrator, dry the lemon chips in a very low oven (82°C/180°F) for 3 hours or until dry.

CHOCOLATE POUND CAKE

yield: 3 cakes

INGREDIENT	METRIC	U.S.	%
CHOCOLATE POUND CAKE			
Butter, soft	**471 g**	**1 lb .64 oz**	**15.7%**
Sugar	**544 g**	**1 lb 3.2 oz**	**18.12%**
Light brown sugar	**170 g**	**6 oz**	**5.67%**
Eggs, at 21°C/70°F	**398 g**	**14.05 oz**	**13.28%**
Chocolate liquor, melted but cool (21°C/70°F)	**73 g**	**2.56 oz**	**2.42%**
Pastry flour	**685 g**	**1 lb 8.16 oz**	**22.82%**
Baking powder	**4 g**	**.13 oz**	**.12%**
Baking soda	**10 g**	**.35 oz**	**.33%**
Salt	**6 g**	**.21 oz**	**.2%**
Cocoa powder	**81 g**	**2.85 oz**	**2.7%**
Vanilla paste	**9 g**	**.33 oz**	**.31%**
Buttermilk	**550 g**	**1 lb 3.36 oz**	**18.33%**
Shiny Dark Chocolate Glaze (page 148), **warm**	**1.2 kg**	**2 lb 10.33 oz**	
Dark chocolate (64%), melted	**300g**	**10.58 oz**	
Chocolate décor chips (see Resources, page 540)	**1.2 kg**	**2 lb 10.4 oz**	
Dark Chocolate Plaques (page 529; 2.5 by 21.5 cm/1 by 8.5 in)	**3**	**3**	
Gold leaf	**1 sheet**	**1 sheet**	

1. **FOR THE POUND CAKE:** Make the recipe according to the creaming method on page 76. The melted chocolate liquor is added after the eggs have been completely incorporated. Combine the vanilla paste with the buttermilk and add at the end of the mixing process (as you would with the crème fraîche).

2. Lightly grease 3 half tube molds (also known as terrine molds) that measure 7.5 by 22.5 by 7.5cm/3 by 9 by 3 in (see Resources, page 540). Brush the molds with softened butter, and then coat them with a light layer of bread flour. Tap the excess off. Each mold should be filled with 1 kg/2 lb 3.2 oz of batter.

3. Preheat a convection oven to 175°C/350°F.

4. Place the filled molds in the oven. After 20 minutes, when the crust starts to form on top of the pound cake, cut a straight line through the crust with a razor blade.

5. After 10 minutes, drop the temperature to 160°C/325°F. Bake for 20 more minutes, then drop the temperature to 150°C/300°F, and bake for about 20 more minutes or until it springs back at the center of the crown when gentle fingertip pressure is applied.

6. Cool to room temperature, and trim the crown off using a serrated knife. This will be the base and therefore needs to be flat.

7. **FOR THE ASSEMBLY/FINISHING:** Flip the pound cake over so that the top is now the bottom.

8. Pour 400 g/14.1 oz of ganache over each cake and let it set in the refrigerator. Pour the melted chocolate into a piping bag. Drizzle the melted chocolate over the entire surface of the pound cakes in thin lines.

9. Surround the pound cake with chocolate décor chips, pressing them gently into the ganache so that they stick.

10. Place a chocolate plaque and then a fleck of gold leaf on top of the pound cake.

notes This recipe is slightly different from the regular pound cake recipe. The chocolate cake is moist, flavorful, and delicate at the same time.

Ganache is an emulsion, and this is why we add the heavy cream in 2 additions; if you add it all at once the ganache might have a grainy consistency once it sets (an indication of a broken emulsion).

MADELEINES

yield: 1.2 kg/2 lb 10.4 oz

INGREDIENT	METRIC	U.S.	%
Butter	281 g	9.9 oz	23.38%
Brown sugar	31 g	1.1 oz	2.6%
Sugar	265 g	9.35 oz	22.08%
Eggs	312 g	10.99 oz	25.97%
Vanilla paste	16 g	.55 oz	1.3%
Lemon zest	5 g	.16 oz	.39%
Salt	3 g	.11 oz	.26%
All-purpose flour	281 g	9.9 oz	23.38%
Baking powder	8 g	.27 oz	.65%
Orange blossom water	50 g	1.76 oz	
Confectioners' sugar	as needed	as needed	

1. Preheat the oven to 160°C/320°F. Lightly grease five 12-piece madeleine pans with nonstick oil spray.
2. Make the madeleine batter according to the creaming method on page 76.
3. Pour the batter into a piping bag. Pipe the batter into the madeleine pans, filling each impression three-quarters of the way full.
4. Bake until the madeleines are golden brown, 5 to 7 minutes.
5. Put a sheet of parchment paper on a work surface.
6. Turn the pans over onto the parchment paper and tap the molds gently onto the table so that the madeleines pop out easily.
7. Brush each madeleine bottom with a small amount of orange blossom water.
8. Turn the madeleines over so that the textured surface is facing up. Dust the madeleines with confectioners' sugar.

note The best way to enjoy a madeleine properly is to have it warm and fresh out of the oven. That will not always be possible if you insist on selling madeleines. You can always refresh them in a hot oven for a couple of minutes before serving them.

BLENDED BATTERS

The blending method by definition is a mixing method in which two or more ingredients are combined just until they are evenly mixed. But there is more to it than that. Typically, the liquid ingredients and dry ingredients are mixed separately and then combined. Liquid ingredients generally mean eggs plus dairy (milk and/or heavy cream and/or buttermilk) and/or melted butter or another liquid fat such as canola oil. What you are trying to accomplish at this point in the recipe is an emulsion. In order to do this, all of the ingredients should be at the same temperature, ideally 21°C/70°F, so that the fat globules will bind with each other more readily than when they are at different temperatures (cold fat globules are firm, while warm fat molecules are softer). For the liquid ingredients, place the warmed eggs in a mixer bowl and slowly pour in the melted but cool butter in a slow, steady stream until they form a homogeneous mass or emulsion. If warm butter is poured into cold eggs, the butter will seize and it will not combine uniformly with the eggs. This will also result in a greasy-looking baked pastry, since the emulsion was never formed in the beginning. The fat will not bind with the other ingredients and will be "loose" in the batter when it bakes, instead of baking into the other ingredients. If the recipe calls for heavy cream, it should be added in the same way, in a constant slow stream. Some recipes will call for eggs, butter, and heavy cream, and they should be added in that order. Always keep a close eye on their temperature and add them in a slow, steady stream. Some recipes will require that the eggs be combined with sugar at the beginning of the recipe before emulsifying anything into them. This is typically when the recipe calls for large amounts of sugar, and this will help dissolve the sugar better than if it were added with the other dry ingredients later in the recipe.

The method principles are as follows:

1. Combine all of the liquid ingredients on medium speed using a paddle attachment (some recipes that require more thorough mixing will use a whip instead). For the amounts in this book, the ingredients can be mixed by hand (use a whisk and a bowl large enough to fit all the ingredients).
2. Sift all of the dry ingredients together. Remember that there are three main reasons for sifting: to break up any clumps, to aerate the dry ingredients (which makes them lighter and easier to incorporate), and to obtain a homogeneous mix (they are evenly distributed within their mass).
3. Add the dry ingredients to the liquid ingredients and mix on low speed.
4. Mix until just incorporated, scraping the bowl as necessary. Don't overmix. Overmixing will cause the gluten in the flour to develop too far, making the batter tough. A sure sign of overmixing is a series of small air tunnels throughout the crumb. This is because the carbon dioxide produced by the leavener needs to push its way out through a tough batter, and the more gluten development, the tougher the batter.
5. Add the garnish at the end (dried fruit, toasted nuts, chocolate chips).

PUMPKIN MUFFINS WITH CRANBERRY GLAZE

yield: 5.6 kg/12 lb 5.6 oz (at 140 g/4.93 oz each)

INGREDIENT	METRIC	U.S.	%
PUMPKIN MUFFINS			
Eggs	**528 g**	**1 lb 2.56 oz**	**9.43%**
Canola oil	**499 g**	**1 lb 1.6 oz**	**8.91%**
Pumpkin purée	**1.32 kg**	**2 lb 14.56 oz**	**23.6%**
Baking soda	**28 g**	**1 oz**	**.5%**
Bread flour	**698 g**	**1 lb 8.64 oz**	**12.47%**
Pastry flour	**698 g**	**1 lb 8.64 oz**	**12.47%**
Ground cinnamon	**19 g**	**.66 oz**	**.33%**
Ground nutmeg	**6 g**	**.22 oz**	**.11%**
Ground cloves	**3 g**	**.11 oz**	**.06%**
Ground allspice	**3 g**	**.11 oz**	**0.06%**
Sugar	**1.79 kg**	**3 lb 15.36 oz**	**32.07%**
CRANBERRY GLAZE			
Confectioners' sugar	**870 g**	**1 lb 14.72 oz**	**86.96%**
Cranberry juice	**130 g**	**4.6 oz**	**13.04%**
Ground cinnamon	**40 g**	**1.41 oz**	

1. **FOR THE PUMPKIN MUFFINS:** Divide 40 mini panettone cups (see Resources, page 540) between 2 sheet pans.

2. Bring the eggs, oil, and pumpkin purée to 21°C/70°F.

3. Sift together the baking soda, flours, cinnamon, nutmeg, cloves, and allspice.

4. Combine the eggs with the sugar in a bowl large enough to fit all of the ingredients. Emulsify the eggs and the oil by slowly whisking in the oil. Stir in the pumpkin purée.

5. Whisk in the dry ingredients.

6. Portion 140 g/4.93 oz of the batter into each of the mini panettone cups, or fill the cups to within .5 cm/.25 in of the top. Freeze the muffins if not baking them right away.

7. Preheat a convection oven to 160°C/320°F.

8. Bake for 15 to 20 minutes, turning the pan halfway through the process to ensure an even bake. Check for doneness with a skewer or by pressing the center of the muffin's crown with a finger; if it springs back, it is done. Cool to room temperature on a speed rack.

9. **FOR THE CRANBERRY GLAZE:** In a stainless-steel bowl, combine the confectioners' sugar with three-quarters of the cranberry juice. The glaze should be thick, not thin such as the one used for the pound cakes (see page 83). If the glaze is too thick, add more cranberry juice. If the glaze is too thin, add more confectioners' sugar.

10. **FOR THE ASSEMBLY:** Dip the crown of the pumpkin muffins into the glaze. Let the excess drip off as much as possible before turning the muffin back over so that the glaze won't trickle down the sides.

11. Sprinkle a pinch of cinnamon on top of the glaze (about 1 g/.04 oz per muffin). Discard after 1 day.

BLUEBERRY MUFFINS WITH OATMEAL STREUSEL

yield: 40 muffins

INGREDIENT	METRIC	U.S. (LBS)	%
Cake flour	**1.42 kg**	**3 lb 2.24 oz**	**25.4%**
Sugar	**593 g**	**1 lb 4.96 oz**	**10.58%**
Baking powder	**43 g**	**1.55 oz**	**.76%**
Salt	**6 g**	**.22 oz**	**.11%**
Butter, melted	**474 g**	**1 lb .8 oz**	**8.47%**
Eggs	**418 g**	**14.75 oz**	**7.47%**
Heavy cream	**1.99 kg**	**4 lb 6.24 oz**	**35.56%**
Vanilla paste	**21 g**	**.74 oz**	**.37%**
Dried blueberries (not fresh or frozen)	**632 g**	**1 lb 6.24 oz**	**11.29%**
Oatmeal Streusel (page 81)	**1 kg**	**2 lb 3.2 oz**	

1. Divide 40 mini panettone cups between 2 sheet pans.
2. Sift together the flour, sugar, baking powder, and salt.
3. Emulsify the butter and eggs as per the blending method on page 89 in a bowl large enough to fit all the ingredients in the recipe. Whisk in the cream and the vanilla paste.
4. Whisk in the sifted dry ingredients. Whisk until a homogeneous mass is obtained. Stir in the blueberries.
5. Portion 140 g/4.93 oz of the batter into each of the panettone cups, or fill them to within .5 cm/.25 in of the top. If you aren't baking the muffins right away, freeze them.
6. Sprinkle 25 g/.88 oz of the oatmeal streusel on top of each muffin.
7. Preheat a convection oven to 160°C/320°F.
8. Bake for 15 to 20 minutes, turning the tray around halfway through the process to ensure an even bake. Test for doneness with a skewer, or press the crown of a muffin with your finger; if it springs back, it is done. Discard after 1 day.

BANANA MUFFINS WITH TURBINADO SUGAR

yield: 40 pieces

INGREDIENT	METRIC	U.S.	%
Cake flour	675 g	1 lb 7.84 oz	10.55%
Bread flour	675 g	1 lb 7.84 oz	10.55%
Baking powder	32 g	1.12 oz	.49%
Baking soda	16 g	.56 oz	.25%
Bananas	1.35 kg	2 lb 15.68 oz	21.11%
Brown sugar	675 g	1 lb 7.84 oz	10.55%
Sugar	675 g	1 lb 7.84 oz	10.55%
Eggs	596 g	1 lb 4.96 oz	9.31%
Canola oil	338 g	11.91 oz	5.28%
Buttermilk	675 g	1 lb 7.84 oz	10.55%
Salt	16 g	.56 oz	.25%
Walnuts, chopped and toasted	675 g	1 lb 7.84 oz	10.55%
Turbinado sugar	1 kg	2 lb 3.2 oz	

1. Divide 40 mini panettone cups (see Resources, page 540) between 2 sheet pans.
2. Sift both flours together with the baking powder and baking soda.
3. Purée the bananas with both sugars, and make sure there are no banana chunks left.
4. Emulsify the eggs with the oil following the blending method on page 89.
5. Whisk the buttermilk into the eggs, then whisk in the puréed bananas.
6. Whisk in the sifted dry ingredients and the salt. Mix until a homogeneous mass is obtained.
7. Stir in the walnuts.
8. Portion 160 g/5.64 oz of the batter into each prepared ring. If not baking the muffins right away, freeze them.
9. Sprinkle 25 g/.88 oz of turbinado sugar on top of each muffin.
10. Preheat a convection oven to 160°C/320°F.
11. Bake for 15 to 20 minutes, turning the tray around halfway through the process to ensure an even bake. Test for doneness with a skewer, or press the crown of a muffin with your finger; if it springs back, it is done. Discard after 1 day.

CORN MUFFINS

yield: 40 muffins

INGREDIENT	METRIC	U.S.	%
Bread flour	876 g	1 lb 14.88 oz	12.89%
Pastry flour	876 g	1 lb 14.88 oz	12.89%
Cornmeal	730 g	1 lb 9.76 oz	10.74%
Salt	3 g	.11 oz	.04%
Baking powder	5 g	.16 oz	.07%
Eggs	609 g	1 lb 5.44 oz	8.95%
Canola oil	876 g	1 lb 14.88 oz	12.89%
Sugar	1.36 kg	3 lb .16 oz	20.05%
Milk	1.46 kg	3 lb 3.52 oz	21.48%

1. Divide 40 mini panettone cups between 2 sheet pans.
2. Sift the flours, cornmeal, salt, and baking powder together.
3. Temper the eggs with the oil following the blending method on page 89. Whisk in the sugar and milk.
4. Whisk in the dry ingredients. Mix until a homogeneous mass is achieved.
5. Portion 170 g/5.99 oz of batter into each of the prepared panettone cups. If not baking them right away, freeze them.
6. Preheat a convection oven to 160°C/320°F.
7. Bake for 15 to 20 minutes, turning the pan halfway through the process to ensure an even bake. Test for doneness with a skewer, or press the crown of a muffin with your fingers; if it springs back, it is done. Discard the muffins after 1 day.

RASPBERRY MUFFINS WITH RASPBERRY GLAZE

yield: 40 pieces

INGREDIENT	METRIC	U.S.	%
Butter	**716 g**	**1 lb 9.28 oz**	**11.19%**
Eggs	**631 g**	**1 lb 6.24 oz**	**9.87%**
Raspberry purée	**1.36 kg**	**3 lb .16 oz**	**21.32%**
Elderflower liqueur (St-Germain)	**325 g**	**11.45 oz**	**5.08%**
Sour cream	**260 g**	**9.16 oz**	**4.06%**
Sugar	**1.59 kg**	**3 lb 8 oz**	**24.82%**
All-purpose flour	**1.44 kg**	**3 lb 2.72 oz**	**22.52%**
Baking powder	**62 g**	**2.2 oz**	**.97%**
Vanilla powder	**10 g**	**.35 oz**	**.16%**
RASPBERRY GLAZE			
Pouring fondant	**1.54 kg**	**3 lb 6.24 oz**	**76.92%**
Raspberry purée	**462 g**	**1 lb .32 oz**	**23.08%**
Crystallized violets	**40**	**40**	
Gold leaf	**2 sheets**	**2 sheets**	

1. Divide 40 stainless-steel rings 7 cm in diameter by 7.5 cm high/2.75 by 3 in between 2 sheet pans lined with parchment paper. Lightly spray the interior of each ring with nonstick oil spray. Cut out 40 pieces of parchment paper that measure 7.5 by 25 cm/3 by 10 in. Line the inside of each ring with a piece of parchment paper.

2. Make sure the butter, eggs, raspberry purée, elderflower liqueur, and sour cream are at 21°C/70°F.

3. Sift the sugar, flour, baking powder, and vanilla powder together.

4. Emulsify the butter and eggs according to the blending method on page 89 in a bowl large enough to fit all the ingredients in the recipe.

5. Whisk in the raspberry purée along with the elderflower liqueur and sour cream.

6. Stir in the dry ingredients. Mix until just combined and a homogeneous mass is achieved.

7. Portion 160 g/5.64 oz of the batter into each of the prepared rings. If not baking the muffins right away, freeze them.

8. Preheat a convection oven to 160°C/320°F.

9. Bake for 15 to 20 minutes, turning the pan halfway through the process to ensure an even bake. Test for doneness with a skewer, or press the crown of a muffin with your fingers; if it springs back, it is done.

10. **FOR THE RASPBERRY GLAZE:** Combine the pouring fondant with the raspberry purée in a bowl. Bring the mixture up to 37°C/99°F over a hot water bath. If it is too thick, add a little more purée. If it is too thin, add more pouring fondant.

11. Dip the crown of each muffin all the way into the glaze. Let the excess glaze drip off, and then turn the muffin back over and let it set.

12. Place the crystallized violets and gold leaf on the glaze before it sets. Let it set for 30 minutes before displaying the muffins.

notes You only need about 30 g/1.05 oz of glaze per muffin, but you will need more than just the exact amount of glaze, since you need to dip the crown of the muffin completely into the glaze so that it can get properly coated.

An alternative glaze can be used for this product (see below).

variation For Bosc Pear Muffins, substitute pear purée for the raspberry purée in the batter, elderflower syrup for the raspberry purée in the glaze, and Crystallized Rose Petals (page 25) for the crystallized violet and gold leaf garnish.

SUPER-SHINY THICK GLAZE

yield: **2 kg/4 lb 6.4 oz**

INGREDIENT	METRIC	U.S.	%
Pouring fondant	**1.62 kg**	**3 lb 9.28 oz**	**81.08%**
Simple syrup, 50° Brix	**216 g**	**7.63 oz**	**10.81%**
White or milk chocolate, melted to 40°C/104°F	**162 g**	**5.72 oz**	**8.11%**
Red food coloring (alcohol or water based)	**as needed**	**as needed**	

1. Combine the fondant and simple syrup in a bowl and warm up over a simmering water bath to 35°C/95°F, stirring frequently. Do not exceed 40°C/104°F; otherwise the fondant will bloom and once it sets, it will be dull. Stir in the chocolate once the other ingredients have reached 35°C/95°F.

2. Add the food coloring just before glazing. Adjust color as needed.

3. Dip the raspberry muffins in up to the crown only. Let all excess glaze drip off before turning them back over, or turn them over and let the excess drip off the sides to give it a drip-down look.

4. Place the garnish (the crystallized violets and gold leaf) on the glaze before it sets. Let it set for 30 minutes before displaying the muffins. Discard the muffins after a day. This glaze can keep indefinitely as long as it is kept covered in an airtight container at room temperature.

note This glaze can be used for many pastries, like doughnuts, muffins, scones, and cookies.

RUBBED BUTTER OR CUT-IN BUTTER QUICK BREADS

This method consists of cutting or rubbing butter or another solid fat into flour. The butter is not mixed in all the way, but is left in pea-size pieces that, when baked, result in a delicate and flaky pastry.

The method principles are as follows:

1. Place all of the dry ingredients in a bowl (typically a type of flour, salt, and a leavener). If making large amounts, mix the dough in an electric mixer using a paddle attachment; otherwise use your hands. If making very large amounts, consider freezing the flour and other dry ingredients to keep them very cold while mixing. Large batches need to mix longer, and longer mixing results in more friction, which produces heat that will melt or soften the butter, having an adverse effect on the final flakiness of the scones.
2. The fat needs to be diced into about 2.5-cm/1-in cubes, and they need to be kept cold until the last minute. Examples of fat used in these items are butter, lard, and shortening. Use butter.
3. To cut the butter in by hand, toss the cold diced fat in the dry ingredients, so that each cube gets coated. Rub the cubes with the palms of your hands with some of the flour, flattening the cubes as you press them into the flour. This is also known as "shingling." The cubes will become flat and part of them will be mixed into the dry ingredients. Repeat with all of the fat in the bowl. To cut the butter in with an electric mixer, mix the dry ingredients with the cold diced fat using a paddle attachment on low speed. Mix until the fat cubes are about the size of a pecan. The flakiness of the dough depends on the size of the butter: The smaller the butter, the more it was mixed into the dough, and the less flaky it will be.
4. If the recipe calls for a garnish such as nuts or dried fruit, add it once all of the fat has been cut in. Be careful to not overmix, since the fat will continue to cut into the flour every time it is mixed and produce a crumbly pastry instead of a flaky one. You might want to add the garnish by hand and give it a quick mix. Items such as biscuits will never have any garnish added.
5. Add the liquid. For biscuits, it is usually buttermilk, which in part is what gives them their characteristic flavor, but also acts as a tenderizer (the acid in the buttermilk tenderizes the gluten strands in the dough). For scones, the liquid is typically heavy cream combined with eggs (sometimes milk is used). Be careful when adding the liquid, since overmixing occurs very easily. If you are mixing by hand, turn the dough onto itself a few times (about eight) until you obtain what is called a "shaggy mass." This is not a uniform dough but only a cohesive dough. A smooth, uniform dough is the most obvious sign of overmixing.
6. Turn the dough onto a floured surface. Using a rolling pin, roll out the dough to the desired thickness. Try to be consistent throughout the entire dough so that you obtain even pieces that bake evenly.
7. Cut the dough out to the desired shape using a floured cutter or knife, depending on the desired shape. If you are not baking it right away, place the dough on a sheet pan lined with parchment paper, wrap, and freeze until needed.

FINANCIERS

yield: 40 pieces

INGREDIENT	METRIC	U.S.	%
Butter	**300 g**	**10.58 oz**	**17.76%**
Egg whites	**341 g**	**12.03 oz**	**28.42%**
Sugar	**355 g**	**12.53 oz**	**29.6%**
Almond flour	**142 g**	**5.01 oz**	**11.84%**
Cake flour	**142 g**	**5.01 oz**	**11.84%**
Baking powder	**6 g**	**.23 oz**	**.53%**
Financier Garnishes (below)			

1. Melt the butter over high heat in a small sauté pan. Continue to cook the butter until the solids caramelize and turn brown. The recipe requires 213 g/7.52 oz of brown butter.
2. Warm the egg whites to 21°C/70°F.
3. Sift together the dry ingredients. Add brown butter and mix until evenly combined. Scrape down the sides of the bowl. Add the egg whites to the mixture. In this case, it is necessary to add the egg whites to the dry ingredients instead of the other way around in order to prevent the dry ingredients from clumping.
4. If not baking right away, refrigerate the batter.
5. Grease financier molds (see Resources, page 540; or use fleximolds) with a light coat of nonstick oil spray. These fleximolds come in small sheets of 12 pieces and up to 72 pieces. Use the smaller sheets if baking small batches at a time, or the larger one if baking them all at once.
6. Preheat a convection oven to 160°C/320°F.
7. Pour the financier batter into a piping bag.
8. Pipe the batter into the molds, filling them three-quarters of the way full.
9. Place the desired garnish at the center of the mold.
10. Bake until the financiers turn a deep golden brown around the border, about 8 to 12 minutes.

financier garnishes

item	garnish
Almond Financier (use almond flour)	40 raspberries (1 raspberry per financier)
Pistachio Financier (use pistachio flour)	40 Luxardo cherries (1 cherry per financier) or other type of cherry in syrup
Macadamia Nut Financier (use macadamia nut flour)	40 macadamia nuts (untoasted)
Hazelnut Financier (use hazelnut flour)	40 pieces hazelnuts, (untoasted)

BASIC SCONES

yield: 40 scones

INGREDIENT	METRIC	U.S.	%
Pastry flour	**1.34 kg**	**2 lb 15.36 oz**	**37.32%**
Salt	**24 g**	**.84 oz**	**.66%**
Baking powder	**48 g**	**1.69 oz**	**1.33%**
Sugar	**144 g**	**5.08 oz**	**4%**
Butter	**576 g**	**1 lb 4.32 oz**	**16%**
Garnish (see page 101)	**576 g**	**1 lb 4.32 oz**	**16%**
Eggs (whole)	**102 g**	**3.58 oz**	**2.82%**
Egg yolks	**68 g**	**2.39 oz**	**1.88%**
Heavy cream	**720 g**	**1 lb 9.44 oz**	**19.99%**
Egg Wash for Brushing (page 13)	**as needed**	**as needed**	

1. Make the scones following the cut-in method on page 97.
2. Roll the dough to 2.5 cm/1 in thick. Use a 7.5-cm/3-in diameter ring cutter dipped in bread flour to cut out the scones. Do not twist the cutter, just cut straight down. Twisting the cutter will seal the scone and keep it from puffing up properly when it bakes.
3. Use an offset spatula to gently pick up the scones and place them on a sheet pan lined with parchment paper. Each sheet pan should have 15 scones in a 3x5 grid. If not baking them right away, wrap and freeze them.
4. Once the scones have been cut out, brush them with egg wash.
5. Preheat a convection oven to 160°C/320°F.
6. Bake until they turn a light golden brown on the top and bottom rim, 15 to 20 minutes. If the top surface is brown, the scones have been overbaked.
7. Transfer the scones to a cooling rack to cool.

note Classic English scones have only currants added as the garnish. See page 101 for suggestions for other scone garnishes.

Never use fresh fruit to make scones; they will add unwanted moisture to the scone, making it a wet, soggy scone.

When using cheese in savory scones, use cheeses that aren't too creamy, since they will melt away from the scone as opposed to into the scone. Hard cheeses are best. Always grate them with the largest opening on the grater. Never cube them, since it is time-consuming and the cheese, even if it is a hard cheese, will melt out of the scone.

scone variations

Use about 576 g/1 lb 4.32 oz for the amount in the recipe above, or about 16 percent of the total weight. The garnish is added once the butter is cut in but before adding the eggs and heavy cream.

garnish	amount
Chocolate and Espresso	Dark chocolate chips (64%): 550 g/1 lb 3.36 oz Soluble coffee crystals: 25 g/.88 oz
Almond and Cherry	Slivered almonds, toasted: 400 g/14.11 oz Dried cherries, coarsely chopped: 175 g/6.17 oz
Pecan and Orange	Pecans, chopped and toasted: 550 g/1 lb 3.36 oz Orange zest: 25 g/.88 oz
Blueberry and Vanilla	Dried blueberries: 560 g/1 lb 3.68 oz Vanilla powder: 15 g/.52 oz
Macadamia Nut and White Chocolate Chips	Macadamia nuts, coarsely chopped and toasted: 350 g/12.35 oz White chocolate chips (ovenproof): 220 g/7.76 oz

savory scones

For savory scones, reduce the amount of sugar to half of the original amount. Add the garnish as for a sweet scone and in the same proportions (16 percent of the total weight).

Some flavor combinations for savory scones are:

garnish	amount
Caramelized Onions and Gruyère	Caramelized onions: 400 g/14.11 oz Gruyère, grated: 175 g/6.17 oz
Serrano Ham and Manchego	Serrano ham, thinly sliced and cut into julienne: 400 g/14.11 oz Manchego, grated: 175 g/6.17 oz
Bacon and Idiazabal	Bacon, parcooked: 400 g/14.11 oz Idiazabal cheese, grated: 175 g/6.17 oz
Prosciutto and Parmesan	Prosciutto, thinly sliced and cut into julienne: 400 g/14.11 oz Parmesan, grated: 175 g/6.17 oz
Black Olive, Basil, and Drunken Goat Cheese	Black olives, coarsely chopped: 280g/9.88 oz Basil, coarsely chopped: 15 g/.52 oz Drunken goat cheese, grated: 280 g/9.88 oz
Ham, Cheddar, and Green Onion	Ham, diced: 280 g/9.88 oz Vermont Cheddar, grated: 280 g/9.88 oz Green onions, coarsely chopped: 15 g/.53 oz

BISCUITS

yield: 40 pieces

INGREDIENT	METRIC	U.S.	%
White Lily Flour (see Resources, page 540)	**1.95 kg**	**4 lb 4.8 oz**	**54.22%**
Baking powder	**95 g**	**3.36 oz**	**2.65%**
Salt	**64 g**	**2.24 oz**	**1.77%**
Butter, chilled and cut into medium dice	**400 g**	**14.12 oz**	**11.12%**
Buttermilk	**1.09 kg**	**2 lb 6.4 oz**	**30.24%**
Butter, melted	**100 g**	**3.53 oz**	

1. Sift the flour, baking powder, and salt together.
2. Cut in the butter following the cut-in method on page 97.
3. Stir in the buttermilk (do not use a whisk) and mix until the dough forms a cohesive mass (a shaggy mass). Transfer the dough to a floured surface and pack it down with your hands, just until it comes together. Roll the dough to 2.5 cm/1 in thick with a rolling pin.
4. Dock the dough with a fork in a uniform, symmetrical pattern.
5. Dip a 7.5-cm/3-in ring cutter in bread flour and cut circles out of the dough. Do not twist the cutter as you cut down, since twisting the cutter will seal the rim of the dough and prevent the biscuits from puffing up properly when they bake.
6. Carefully transfer the biscuits to a sheet pan lined with parchment paper. If not baking them right away, wrap and freeze them.
7. Preheat a deck oven to 237°C/460°F.
8. Bake the biscuits until the top and bottom rim of the biscuits turn golden brown, 10 to 12 minutes, rotating the sheet pan halfway through the process to ensure an even bake.
9. When the biscuits come out of the oven, brush them with the melted butter.

breads

This is by no means a book about breads. The breads that are covered in this section are merely two basic varieties from which we will make different shapes and add different garnishes. Their main purpose is to serve as sandwich bread (see page 360) and, for some varieties, to be sold as loaves. In order to keep this section simple, only the basic principles of making these two varieties of bread are covered.

Making good bread is a matter of being well organized, making sure to follow instructions, and being very precise when weighing out recipes. Good bread is also the result of how the dough is handled and proper fermentation. As with laminated dough, every single step is important, and you cannot skip one or cut a corner here or there if you want to make good bread.

Following are the twelve steps of bread making:

1. Mise en place: Have all the ingredients, tools, and equipment ready to go. This means that the pre-ferments have had the time they need to ferment, the ingredients are weighed out, the liquids are at the right temperature, and you have a thermometer, a floured or greased surface or bin, depending on the bread, and a plastic bag or plastic wrap (to cover the dough) ready.
2. Mixing (or kneading): The purpose of mixing is to develop gluten, distribute ingredients evenly, and start the fermentation process. Mixing time depends on the type and the amount of dough. While mixing by hand has its place, using an electric mixer to mix the dough will expedite the process and ensure uniform mixing. Dough can be mixed to three stages of gluten development:

   Short mixing method (minimal gluten development/soft dough): When the dough is mixed to this stage, it needs to go through a long first fermentation to strengthen the dough. The gluten bonds are strengthened during this fermentation. It can take up to 3 hours, and the dough will need to be folded onto itself two or three times to degas it and to get the dough to have an even temperature distribution (see next step). This is very good for the actual dough, since it will develop its flavors better (long and slow fermentation is always better for flavor development than short and fast fermentation), and it extends the shelf life of the finished bread. The only disadvantage is that it takes a lot of time, especially if there are many breads in the shop that go through the same process.

   Intense mixing method: This mixing method achieves full gluten development. This speeds up the fermentation process and, as a result, the baking. However, it is not ideal for bread flavor and texture.

   Improved mixing method: This is a combination of the first two methods. It does not achieve full gluten development, but the dough will be have enough gluten development to be extensible and medium-soft (medium gluten development). The dough will strengthen during a semi-long first fermentation of about 1½ hours (see step 3). The improved mixing method is a happy compromise between a long and slow fermentation and full gluten development. This method is recommended for most doughs.
3. First (or primary) fermentation: Here is where fermentation begins, and it is a crucial step toward dough and flavor development. After the dough is mixed, it is left to ferment, covered, at room temperature on a floured surface. The fermentation time depends on the type of bread.
4. Degassing or punching down the dough: This is a literal term. The dough is punched down, and this process has four purposes: to relax the dough, to expel excess carbon dioxide (CO_2 and alcohol are produced during the fermentation process), to even out the dough temperature (the exterior dough will be cooler than the dough at the center of the mass), and finally, to redistribute the ingredients in the dough, which kicks off a second round of yeast feeding.
5. Dividing the dough: The dough is cut out, preferably with a bench knife to avoid tearing the dough apart, and scaled to the desired weight. If dividing large amounts of dough, keep the scaled pieces covered and on a floured surface.
6. Rounding the dough: This will preliminarily shape the dough into the desired form (miche, boule, bâtard, baguette, etc.).
7. Benching the dough: The dough and specifically the gluten is left to relax a little longer. The amount of time depends on the type of dough.
8. Shaping: The dough is reshaped to its final shape.
9. Second (secondary) fermentation: This is yet another step toward flavor development through fermentation and is also known as proofing. The proofing time depends on the desired final size. For the most part, the dough will be about 85 percent

of the desired finished size when it is ready to be baked. Proofing can take place in a variety of environments (see proof box in lamination proofing instructions, page 48). Not all doughs go through this step; it depends on the mixing method and the duration of the first fermentation.

10. Scoring and baking: Before bread is baked, it needs to be scored. Scoring helps the dough expand without ripping by giving it a vent to let the steam from the dough escape. The ability to score a dough properly (just deep enough and at the right angle) is something that comes with practice. The angle and depth of the score depends on the baker, and it will determine the final look of the dough. The preferred oven for baking bread is a hearth oven, where there is direct bottom heat, which will give the dough a good initial rise (known as oven-spring) and help form a crisp crust. These ovens are equipped with a steam button, which is crucial for color development and crust formation, as well as a vent, which is also responsible for color and crust formation. The amount of steam used depends on the baker and the oven. The bread can be loaded into the oven by a peel that is dusted with flour or semolina, or by a loader. If using a loader, make sure that the bread is evenly spaced to ensure even heat flow. How do you know when the bread is baked? One way to tell is if you tap the bottom of the loaf with your hand and it produces a hollow sound. This works for larger loaves like boules, but how do you tell if a baguette is done? The clearest way to tell is by the color of the crust and the darkening of the ears (the exposed part of the dough where it was scored). Another way to tell that is somewhat foolproof but may damage the bread is to insert a probe thermometer into a loaf. If it reads 93°C/200°F to 96°C/205°F, it is done.
11. Cooling: You won't be able to tell if the crumb is good if you cut bread while it is still hot, since steam is still escaping and the crumb is still forming. Some say that you should wait for the bread to cool in order to appreciate its flavors to the fullest.
12. Storing: While as a rule of thumb you should sell bread the day you make it, some sourdoughs actually improve after a couple of days. Bread should be displayed as is, but should be packed in paper bags to ensure that the crust will stay crisp longer. Plastic bags make the crust soggy quickly because the bread cannot breathe. Day-old bread is good for croutons, bread crumbs, and in some cases bread pudding.

note The breads we cover in this book are derived from lean dough and sourdough. It is important to mention that we will also be using brioche for sandwiches (see Pullman Loaf, page 37).

DETERMINING THE DESIRED DOUGH TEMPERATURE (DDT) TO OBTAIN THE REQUIRED WATER TEMPERATURE FOR A DOUGH

When mixing bread dough, don't just weigh or measure the water and add it to the remaining ingredients. It is important to first take the temperature of the water and adjust it so that it is at the correct temperature before adding it to the remaining ingredients. The water temperature will have an effect on mixing (colder water extends mixing time), proofing (warmer water accelerates fermentation), and baking (as a result of the effect of water on mixing time and proofing time). In order to obtain the ideal water temperature, the Desired Dough Temperature needs to be established. The ideal DDT for most dough is between 23°C/74°F and 25°C/77°F. In order to calculate the DDT, consider three factors:

- Room temperature
- Flour temperature: This is usually the same as room temperature.
- Friction temperature: As the dough is mixed, the friction created by the movement of the dough hook (or spiral mixer hook and bowl), increases the temperature of the dough. Typically, the dough will increase 3.6°C/2°F for every minute of mixing.

Formula:
To obtain the water temperature, first multiply the DDT by the number of factors that will affect the DDT: 3 (room temperature, flour temperature, and friction temperature). Next, subtract the room temperature, flour temperature, and friction temperature. The result will be the required water temperature.

Example:
DDT: 23°C/73°F
Multiply the DDT by the amount of factors that will contribute to the DDT:
23 x 3 = 69
Subtract room temperature: −20°C
Subtract flour temperature: −20°C
Subtract friction factor: −14.4°C
Water temperature: 14.6°C/58.3°F

possible defects of breads

defect	cause(s)	solutions (the appropriate steps need to be taken beforehand)
Loaf looks like a mushroom cap or is not tapered around the base	Dough was overproofed* (particularly for a boule, miche, or bâtard).	Proof until the dough springs back when gentle fingertip pressure is applied; the dough should be roughly twice its original size.
Tight crumb	Dough was underproofed*.	See note above.
	Dough was mixed too long.	Mix to the required gluten development.
	There is too much salt in the dough.	Scale the ingredients out carefully.
Dough looks ripped	Underproofed*.	Proof until the dough springs back when gentle fingertip pressure is applied; the dough should be roughly twice its original size.
	Improperly scored (score was not deep enough or in the wrong area of the bread).	Scoring also takes much practice. Scoring too deep can deflate the dough, but not scoring deep enough can make the dough look like it is ripped since the trapped steam will expand the score in order to escape.
Bread has little or no color on the surface	Bread was not vented while it baked.	Always vent the oven during the last few minutes of baking.
	Salt may have been scaled incorrectly.	Scale the ingredients out carefully.
Surface is cracked	Steam was not applied at the beginning of the baking process.	Make it a habit to apply steam just after the bread is loaded into the oven.
Score is barely noticeable	Score was not deep enough.	Score the dough to the correct depth; only practice can determine how deep you need to score each dough.
Bread is flat	Underproofed/overproofed*.	Proof until the dough springs back when gentle fingertip pressure is applied; the dough should be roughly twice its original size
	Oven was not hot enough (no oven-spring).	Always check the oven temperature before loading it.
Bread smells like alcohol	Overproofed*; crumb will also be very large; also, see first defect in this table.	Proof until the dough springs back when gentle fingertip pressure is applied; the dough should be roughly twice its original size.
Crumb feels wet or gummy	Dough was undermixed.	Mix to the required gluten development.
	Dough has the wrong amount of water added.	Always scale out ingredients carefully.
	Water temperature was incorrect when mixing the dough.	Take the temperature of the water before adding it to the other ingredients in the mixer.

defect	cause(s)	solutions (the appropriate steps need to be taken beforehand)
Dough is tough	Too much salt was added. Dough was overmixed (gluten developed too much).	Always scale the ingredients out carefully. Mix to the required gluten development.
Crust is too thick	Overbaked.	Have timers available by the oven; always check the oven during baking.

*Adequate proofing (fermentation) will vary from item to item. In most cases, the product will double in size, but it is not a set rule for all items. Knowing when a dough is proofed requires extensive experience gained through trial and error. Touching the dough to test for proof and having it double in size are two ways to tell if the dough is ready to bake or not.

displaying and packaging bread and breakfast pastries

PRETEND THAT YOU WALK INTO A VERY EXPENSIVE STORE that carries very expensive shoes, and the shoes are strewn around the floor instead of neatly placed on the shelves, there is dust on the shelves, and the salesperson is loudly chewing gum. You spot a really nice pair of shoes amid the mess, and they are very expensive. You really like them, but the price tag seems out of place for the establishment. You pay for them anyway, since you can see that the quality of the shoe is outstanding, even though they were sitting in a pile of dirt. The salesperson takes your money and gives you the shoes in a crumpled-up brown paper bag with a grease stain. Something feels very wrong. It is still the same great pair of shoes and you are going to get rid of the bag once you get home regardless of what it looks like. It's not that you need the bag. But the experience seems off-kilter. All of this is to illustrate a point: Displaying and packaging are 50 percent of the sale, especially for new customers. Neatly lined-up breads, pastries, and desserts make a world of difference. The process doesn't end when your product comes out of the oven. It is wise to invest in quality, solid packaging. I am not going to preach about using eco-friendly materials or not—that is up to you—but the image of your packaging is the image of your establishment that the customers take wherever they go. If you are selling a $2 croissant, for example, don't just stuff it in a generic brown paper bag. Have bags made with your logo or your colors, and the customer won't think twice about paying $2 for a croissant. People will fall in love with what they see first, and then with how it tastes. If it is visually appealing, symmetrical, and clean, it makes people happy. Of course taste and texture are the ultimate determining factors, but how do you get someone to taste what you make in the first place? What do you need to do to get them to give you their money and keep giving it to you every day of the week? Well, a good start is an impeccable display case and appealing packaging. Of course, knowing how to make all of those things that will go into those shelves and packages is of equal importance. Don't forget, also, that even though your packaging needs to be visually appealing, the ultimate function of packaging is that it needs to get the product safely from point A to point B.

LEAN DOUGH

yield: 3.7 kg/8 lb 2.4 oz dough

INGREDIENT	METRIC	U.S.	%
POOLISH			
Bread flour	**743 g**	**1 lb 10.24 oz**	**100%**
Instant yeast (red label)	**3 g**	**.12 oz**	**.45%**
Water	**743 g**	**1 lb 10.24 oz**	**100%**
FINAL DOUGH			
Bread flour	**1.43 kg**	**3 lb 2.24 oz**	**100%**
Poolish	**1.48 kg**	**3 lb 4.48 oz**	**104.3%**
Water, at 21°C/70°F	**739 g**	**1 lb 10.08 oz**	**51.83%**
Instant yeast (red label)	**3 g**	**.12 oz**	**.23%**
Salt	**43 g**	**1.52 oz**	**3.03%**

1. **FOR THE POOLISH:** The DDT for the poolish is 21°C/70°F. Mix the flour with the yeast, and then add to the water. This can be mixed by hand in a bowl. The poolish should be left to ferment at room temperature for at least 4 hours but ideally up to 12 to 18 before it is needed.

2. **FOR THE FINAL DOUGH:** The DDT for the dough is 25°C/77°F. Use the improved mixing method on page 104. Combine the flour, poolish, water, and yeast in a mixer. Mix for 3 minutes on low speed. Allow it to rest, covered, for 15 minutes. Add the salt and mix for 4 to 5 minutes on low speed. If making larger amounts of dough, for example, twice as much, the dough will require more mixing time during the second mixing, just enough until full gluten development is reached.

3. Transfer the dough to a floured wooden table and let it bulk ferment for 1 hour covered with a plastic bag.

4. Punch the dough down, and fold it onto itself. Keep it covered.

5. Bulk ferment for 45 more minutes.

6. Divide the dough into 370-g/13.05-oz pieces for baguettes, or 370-g/13.05-oz pieces for épi.

7. To preshape the baguettes and épis, push the dough down with the heel of your hand and brush the excess flour off the dough. Roll the dough in toward you (vertically), pushing the dough down with your fingertips as you roll it up to tighten the roll and to help degas it. Make sure that there isn't too much flour on the dough; brush it off if you can see it. Roll it out to a 40-cm/16-in oblong with slightly tapered ends.

The intermediate fermentation for all of the shapes should be 15 minutes. Keep them covered with plastic.

8. **FOR THE FINAL SHAPING OF THE BAGUETTE AND ÉPI:** Roll the dough out to 57.5 cm/23 in long. Try to get an even roll with tapered ends. Place a linen couche on a wooden board and coat the couche with some bread flour. Start placing the baguettes on the linen with the seams facing the linen, making sure that you pull the linen in to "cradle" each baguette; this will keep them separate from each other and will also keep them straight.

9. Proof épis and baguettes for 1½ hour to 2 hours at room temperature, or in a proof box for 1 hour to 1 hour and 15 minutes at 30°C/86°F with 80 percent humidity.

10. **FOR BAKING THE BAGUETTE:** Preheat a hearth oven to 250°C/482°F. Flip each baguette onto a wooden paddle by pulling on the side of the linen, then flip the baguette onto a loader. The seam of the baguette should be on the bottom again. Make five to six 45-degree-

angle scores of even lengths (about 7.5 cm/3 in long) down the length of the dough with a lame. Load all 10 baguettes into the oven at the same time (5 baguettes at a time on the loader; 5 on the left side of the deck, 5 on the right side). Make sure they are evenly spaced. Load the baguettes into the oven and press the steam button for 5 to 10 seconds, depending on the oven. Bake for about 20 minutes, and then open the vent and bake for 5 more minutes. Take the bread out of the oven with a peel and slide onto a metro shelf to cool.

FOR BAKING THE ÉPI: Preheat a hearth oven to 250°C/482°F. Flip each piece of dough onto a wooden paddle, and then flip the dough onto the loader. Once all the "baguettes" are on the loader, cut the baguette using scissors into 6 evenly spaced pieces at a 45-degree angle; be careful to not cut all the way through the dough. All cuts should be evenly spaced and the same size. Turn one tip gently to one side, and then pull the next tip in the opposite direction, and so on. Do this as you are cutting the dough. Load the épis into the oven (5 épis at a time on the loader; 5 on the left side of the deck, 5 on the right side) and press the steam button for 5 seconds. Bake for about 20 minutes, and then open the vent and bake for 5 more minutes. Take the bread out of the oven with a peel and slide onto a metro shelf to cool.

notes The practice of resting the dough before adding the salt and mixing to full gluten development is known as "autolysis." It was discovered by Professor Raymond Calvel in France, who realized that this rest period improves the links between starch, gluten, and water and improves the extensibility (stretchiness) of the dough. As a result, when the mixing is resumed, the dough forms a mass and becomes smooth more quickly, reducing mixing time by about 15 percent. This produces bread with more volume, better crumb, and better structure. Mixing the dough for too long can also cause it to oxidize, turning it a pale white.

Basic Method for Shaping and Cutting Épi

FROM LEFT TO RIGHT:

1. Use the palms of your hands to roll the baguette dough into an oblong shape with slightly tapered ends.
2. Instead of scoring the baguette, you can instead use a pair of sharp scissors to snip the dough into the classic épi shape.
3. A well-baked épi or baguette will have a hard, brown crust that produces a hollow sound when the bottom of the loaf is tapped.

Épis

CIABATTA

yield: 12.5 kg/27 lb 8.96 oz (ten 1.25-kg

INGREDIENT	METRIC	U.S.	%
POOLISH			
Bread flour	**1.74 kg**	**3 lb 13.28 oz**	**100%**
Water	**1.74 kg**	**3 lb 13.28 oz**	**100%**
Instant yeast (red label)	**14 g**	**.48 oz**	**.79%**
FINAL DOUGH			
Bread flour	**5.18 kg**	**11 lb 6.56 oz**	**100%**
Water, at 26°C/80°F	**3.62 kg**	**7 lb 15.52 oz**	**69.84%**
Poolish	**3.49 kg**	**7 lb 10.88 oz**	**67.3%**
Instant yeast (red label)	**34 g**	**1.21 oz**	**.66%**
Salt	**162 g**	**5.7 oz**	**3.12%**

1. **FOR THE POOLISH:** The DDT for the poolish is 21°C/70°F. Mix the flour and the yeast, and then mix it into the water. Make the poolish 18 hours before it is needed and leave it covered at room temperature.

2. The DDT for the final dough is 23°C/74°F. Bulk ferment the dough for 40 minutes. For the final dough: In a large bowl, combine the flour, water, poolish, and yeast and mix with your hands for 3 minutes.

3. Let the dough sit in the bowl for 15 minutes, covered with a plastic bag.

4. Add the salt and mix again by hand for 5 more minutes. Cover the bowl with a lid or a plastic bag.

5. Fold the dough onto itself and bulk ferment for 10 more minutes.

6. Transfer the dough to a heavily floured surface. If the dough is being used for loaves, roll it out to 2.5 cm/1 in thick; if it is for individual pieces, roll it out to 1.25 cm/.5 in thick.

7. Using a bench knife, cut the dough. For loaves, cut the dough into pieces 12.5 by 30 cm/5 by 12 in (each about 1.25 kg/2 lb 12.08 oz). For individual pieces, cut the dough into pieces 7.5 by 12.5 cm/3 by 5 in (each about 125 g/4.41 oz).

8. Transfer the dough pieces to a wooden board lined with a linen couche that is coated in an abundant amount of bread flour. This will keep the dough from sticking to the linen. Reshape each piece into a rectangle. The dough is very wet, which makes it practically impossible to form a perfectly even rectangle. However, this is fine because ciabattas should have a somewhat rustic look.

9. Dust the top of the ciabatta with a generous amount of bread flour. Proof in a proof box set to 30°C/86°F with 80 percent humidity for 45 minutes to 1 hour.

10. Preheat a hearth oven to 250°C/480°F.

11. Dust the loader with semolina. Flour the top of the ciabattas generously with semolina, flip them onto a wooden paddle dusted with semolina, and then slide them (not flip them) onto the loader. The surface that was at the bottom in contact with the linen will have the characteristic flour pattern of a ciabatta and the top will not. Make sure the loader is coated with plenty of semolina so that the ciabattas don't stick. Make sure that the ciabattas are evenly spaced. If you made loaves and individual pieces, do not bake them in the same deck. They will take slightly different times to bake and it will affect even heat flow.

12. Load the oven and press the steam button for 5 to 10 seconds, depending on the oven.

13. Bake the loaves for 20 minutes, and then open the vent and bake for 5 more minutes. Bake the individual pieces for 15 minutes, and then open the vent and bake for 5 minutes.

14. Using a peel, take the bread out of the oven and slide it onto a metro shelf to cool.

variation: For Dill Ciabatta Buns, add 120 g/4.23 oz chopped dill with salt in step 4.

COUNTRY BREAD

yield: 10 bâtards

INGREDIENT	METRIC	U.S.	%
PRE-FERMENT			
Bread flour	**1.87 kg**	**4 lb 1.6 oz**	**100%**
Water	**1.21 kg**	**2 lb 10.56 oz**	**65.03%**
Instant yeast (red label)	**23 g**	**.79 oz**	**1.21%**
Salt	**37 g**	**1.29 oz**	**1.97%**
FINAL DOUGH			
Bread flour	**3.71 kg**	**8 lb 3.04 oz**	**89.9%**
Medium rye flour	**412 g**	**14.55 oz**	**11.1%**
Water	**2.61 kg**	**5 lb 12.32 oz**	**70.48%**
Instant yeast (red label)	**50 g**	**1.76 oz**	**1.35%**
Salt	**81 g**	**2.87 oz**	**2.19%**
Pre-ferment	**3.12 kg**	**6 lb 14.24 oz**	**84.1%**

1. **FOR THE PRE-FERMENT:** The DDT for the pre-ferment is 21°C/70°F. Mix all the ingredients in an electric mixer on low speed using a dough hook until a homogeneous mass is obtained.

2. Allow it to ferment for 1 hour at room temperature, and then refrigerate overnight. The following day, let the pre-ferment reach room temperature (1 to 2 hours) before mixing the dough.

3. **FOR THE FINAL DOUGH:** The DDT for the final dough is 23°C/74°F. Mix all of the ingredients in an electric mixer on low speed using a dough hook until full gluten development is achieved.

4. Bulk ferment the dough for 1 hour on a floured surface, covered with plastic.

5. Divide the dough into 10 pieces that are 1 kg/2 lb 3.2 oz each.

6. Preshape pieces of dough into tight balls. Let the dough relax for 30 minutes.

7. Flour 2 couches and place them on wooden planks. You will place 5 bâtards on each couche setup.

8. Flatten the dough balls with the heel of your hand and roll them up toward you, pressing down the border or rim of the roll onto the bottom part of the dough as you roll it in to form a tight oval. Roll the oval out to form a bâtard that is 50 cm/20 in long. Place each piece on the floured couches with the seam facing down and cradle them with the couche.

9. Proof for 1 hour and 15 minutes at 27°C/80°F and 60 to 70 percent humidity.

10. Preheat a hearth oven to 260°C/500°F.

11. Dust the loader with semolina. Turn the bâtards onto a wooden paddle and place them on the loader. Score three 7.5-cm-/3-in-long cuts down the middle at a 45-degree angle.

12. Load the oven and press the steam button for 3 seconds.

13. Bake for 30 to 35 minutes or until the crust is a dark golden brown. Open the vent for the last 4 minutes of baking.

note Country bread is a type of bread that can be shaped into many different forms. The dough is often used to make what are known as French regional breads, as with baguette dough, but I prefer to use much simpler shapes. For the country bread in this section we will be shaping the bread into bâtards that are 1 kg/2 lb 3.2 oz each.

BRETON BREAD

yield: 12 kg/26 lb 7.36 oz dough (or four 3 kg/6 lb 9.76 oz miches)

INGREDIENT	METRIC	U.S.	%
PÂTE FERMENTÉE			
Bread flour	**891 g**	**1 lb 15.43 oz**	**100%**
Instant yeast (red label)	**7 g**	**.5 oz**	**.8%**
Salt	**17 g**	**.6 oz**	**2%**
Water	**624 g**	**1 lb 6 oz**	**70%**
FINAL DOUGH			
Bread flour	**5.42 kg**	**11 lb 15.2 oz**	**76.19%**
Light buckwheat flour	**1.03 kg**	**2 lb 4.48 oz**	**19.05%**
Medium rye flour	**258 g**	**9.11 oz**	**4.76%**
Instant yeast (red label)	**21 g**	**.73 oz**	**.38%**
Pâte fermentée	**1.54 kg**	**3 lb 6.32 oz**	**28.57%**
Water	**3.61 kg**	**7 lb 15.52 oz**	**66.67%**
Gray salt, ground to powder in a spice or coffee grinder	**103 g**	**3.64 oz**	**1.9%**

1. **FOR THE PÂTE FERMENTÉE:** The DDT for the pâte fermentée is 21°C/70°F. Mix all of the ingredients on low speed until medium gluten development is reached. Let it relax for up to 5 hours before it is needed or until it has doubled in volume. Alternatively, let it sit at room temperature for 1 hour, and then refrigerate it for up to 48 hours. Pull it out of the refrigerator 2 hours before it is needed so that it can reach room temperature.

2. **FOR THE FINAL DOUGH:** The DDT for the final dough is 23°C/74°F. Mix on medium speed until the dough achieves medium gluten development (also known as improved mix). The dough can stretch, but it will not have the strength of dough with full gluten development. It will rip before it forms a window.

3. Bulk ferment the dough for 1 hour, covered with plastic. Fold the dough onto itself and bulk ferment for 45 more minutes.

4. Dust 4 miche baskets with bread flour.

5. Divide the dough into pieces that are 3 kg/6 lb 9.76 oz each.

6. Bench rest for 15 minutes, and then shape into large boules. Put the shaped pieces into the dusted baskets, seams facing up.

7. Proof at 27°C/81°F with 60 to 70 percent humidity for 1 hour to 1 hour and 15 minutes.

8. Preheat a hearth oven to 250°C/482°F.

9. Dust the loader with semolina. Turn the baskets carefully onto the loader. Space the bread out evenly (staggered in a 2x2 grid) and score it with a crisscross across the top.

10. Load the bread into the oven and press the steam button for 2 seconds. After 5 minutes, lower the temperature to 200°C/390°F. Once the loaves have turned golden brown, open the vent and bake until the miches reach an internal temperature of 96°C/205°F. Since it is such a large piece of bread, be sure to always take the internal temperature. Baking times can fluctuate wildly depending on the oven.

note This recipe contains gray sea salt from Brittany, France. It produces a bread with a slightly greenish-gray hue, with a mineral taste from the salt. This is a terrific bread to bake in large pieces, such as a miche.

weekend breads and pastries

A GREAT SALES OPPORTUNITY IS PRODUCING WEEKEND PRODUCTS. Weekend products can be extremely profitable, since typically it can be whatever you make during the week but bigger, because these items are meant to be shared. During the week, individual or small pastries or breads will be the most requested items. But from Thursday to Sunday, many people partake in social gatherings with friends and family. This means that they will need something big enough to serve a larger group of people.

Ideally, you would know in advance exactly what your customers will need for any given day, but that won't be the case most of the time. In fact, your customers may not know exactly what they want most of the time until they see it.

First and foremost, if you have established a loyal customer following, they will know what kind of products you have. They will show up and see what you have to offer for the weekend, like a large miche, a chocolate pound cake or two, a dozen breakfast pastries for the next morning, a cake for dessert, a box of chocolates, or a pound of coffee. This is your favorite customer. Your job is to make sure you always have that particular kind of product available at the right time of the week.

Most of your customers know what they need beforehand when it comes to simple items like a cup of coffee and a muffin. But never underestimate the power of impulse buying. Ideally your establishment is a busy one where there is a line of people waiting to pay. Set up a table next to that line with a variety of weekend items, all packaged and ready to go, and you will surely sell out by the end of the day.

FRANCESE

yield: 10 loaves

INGREDIENT	METRIC	U.S.	%
SPONGE			
Bread flour	**449 g**	**15.85 oz**	**100%**
Water	**449 g**	**15.85 oz**	**100%**
Instant yeast (red label)	**.88 g**	**.03 oz**	**.2%**
FINAL DOUGH			
Bread flour	**1.49 kg**	**3 lb 4.64 oz**	**79.54%**
Whole wheat flour	**306 g**	**10.78 oz**	**20.46%**
Water	**1.25 kg**	**2 lb 12.48 oz**	**84.34%**
Instant yeast (red label)	**6 g**	**.22 oz**	**.42%**
Salt	**36 g**	**1.28 oz**	**2.43%**
Sponge	**900 g**	**1 lb 15.02 oz**	**60.26%**

1. **FOR THE SPONGE:** The DDT for the sponge is 21°C/70°F. Mix the ingredients until well incorporated by hand. Cover with a damp cloth and allow to pre-ferment at room temperature for 1 hour. Refrigerate overnight.

2. Pull the pre-ferment out of the refrigerator to reach room temperature 2 hours before mixing the dough.

3. **FOR THE FINAL DOUGH:** The DDT for the dough is 23°C/74°F. Mix for minimum gluten development (also known as short mix) , about 5 minutes by hand in a bowl or a plastic tub, as you would with ciabatta, stirring to incorporate the ingredients. Place the dough on a wooden table that is generously floured.

4. Bulk ferment the dough for 3 hours, covered with a damp cloth that is not directly in contact with the dough's surface; put it over the bowl or tub used to mix the dough. Fold the dough 3 times during the bulk ferment (once each hour). Keep the dough covered with plastic. Meanwhile, flour 2 couches generously and place each one on a wooden board.

5. Divide the dough into 400-g/14.11-oz pieces. This dough does not need to be preshaped or bench rested. Shape into a long strip and place it on the prepared linen; cradle each piece with the couche. A rough measurement for the strip is about 7.5 by 45 by 2.5 cm/3 by 18 by 1 in.

6. Proof at 27°C/80°F for 45 minutes at 60 to 70 percent humidity.

7. Preheat a hearth oven to 240°C/464°F.

8. Dust the loader with semolina. Carefully put the bread on the loader using a wooden paddle. This bread does not need to be scored. Load the oven and press the steam button for 2 seconds.

9. Bake for 35 to 38 minutes, opening the vent for the last 4 minutes. This bread comes out very dark.

notes To make this Francese with caramelized onions, add 400 g/14.11 oz of caramelized onions to the dough by hand once it has finished mixing.

Francese is a rustic Italian bread that is not scored like ciabatta. It means "French bread" in Italian. It goes through a very long first fermentation in order to develop the best flavor. This is why the dough is mixed with minimum gluten development, so that it can develop its flavor and strengthen during that first fermentation.

sourdough

The varieties of sourdough covered on pages 121 through 122 are plain sourdough boule, bacon and caramelized onion bâtard, chorizo boule, and wild mushroom miche.

Sourdough can be shaped in many ways, but for our needs, the boule (ball), bâtard (oval oblong), and miche (large ball) are the most useful for slicing and selling whole. It is important, as with any bread, to make sure that you are performing proper shaping in order to obtain an evenly shaped, properly baked sourdough. Shaping should make the bread as tight as possible to avoid any unwanted air pockets inside the bread; this will also help degas the bread.

You will need to have a white sour starter, and you will need to feed it on a daily basis. The sourdough recipe contains only wild yeast.

WHITE SOUR STARTER

A white sour starter takes 5 days to make, but once you have it you can keep it alive by feeding it every day, and this way it can be used for daily bread production. Many bakeries have had their white sour starter for years, some for decades, and some for even more than that. This starter uses wild yeast, which is why it takes so many days to make.

DAY 1

INGREDIENT	METRIC	U.S.	%
Bread flour	**200 g**	**7.05 oz**	**100%**
Water, at 30°C/86°F	**200 g**	**7.05 oz**	**100%**

Mix the flour and water together. Let sit overnight at room temperature, covered.

DAY 2

Stir the mixture from day 1.

DAY 3

INGREDIENT	METRIC	U.S.	%
Day 1 mix	**200 g**	**7.05 oz**	**100%**
Water, at 30°C/86°F	**200 g**	**7.05 oz**	**100%**
Bread flour	**200 g**	**7.05 oz**	**100%**

Weigh out the necessary amount of day 1 mix and discard the leftovers. Stir in the water. Mix in the flour. Reserve overnight at room temperature, covered.

DAY 4

INGREDIENT	METRIC	U.S.	%
Day 3 mix	**400 g**	**14.11 oz**	**100%**
Water, at 30°C/86°F	**200 g**	**7.05 oz**	**100%**
Bread flour	**200 g**	**7.05 oz**	**100%**

Weigh out the necessary amount of day 3 mix and discard any leftovers. Stir in the water. Mix in the flour. Reserve at room temperature, covered.

DAY 5

INGREDIENT	METRIC	U.S.	%
Day 4 mix	**200 g**	**7.05 oz**	**33.33%**
Water, at 30°C/86°F	**400 g**	**14.11 oz**	**66.66%**
Bread flour	**600 g**	**1 lb 5.12 oz**	**100%**

Weigh out the necessary amount of day 4 mix and discard any leftovers. Stir in the water. Mix in the flour. Reserve at room temperature, covered.

FOR THE DAILY FEEDING

INGREDIENT	METRIC	U.S.	%
Water, at about 9°C/48°F	**1.45 kg**	**3 lb 3.2 oz**	**100%**
White sour starter (see page 118)	**251 g**	**8.87 oz**	**17.33%**
Bread flour	**1.45 kg**	**3 lb 3.2 oz**	**100%**

1. **TO FEED THE SOUR:** Place the cold water (from the tap) in a mixing bowl and dissolve the sour starter in it.
2. Add the flour and mix until a homogeneous mass is obtained.
3. Leave at room temperature (21°C/70°F).
4. Make sure to feed this white sour starter 18 hours before mixing the dough and on a daily basis.

Basic Method for Shaping and Scoring a Boule

FROM LEFT TO RIGHT:

1. To create a boule, use your hands to shape the sourdough into a round ball.
2. Before baking, score each boule as desired.
3. A properly baked loaf of sourdough.

Sourdough Boules

SOURDOUGH

yield: 13.5 kg/29 lb 12.16 oz dough

INGREDIENT	METRIC	U.S.	%
Bread flour	5.39 kg	11 lb 13.76 oz	76.62%
Whole wheat flour	630 g	1 lb 6.24 oz	11.69%
Medium rye flour	630 g	1 lb 6.24 oz	11.69%
White sour starter	3.15 kg	6 lb 14.88 oz	58.45%
Water, at 21°C/70°F	3.46 kg	7 lb 10.08 oz	64.28%
Salt	227 g	7.99 oz	4.2%

1. **FOR THE SOURDOUGH:** Make sure to feed the white sour starter 18 hours before mixing the dough.

2. Add the flours, starter, and water to the mixer bowl. Mix on low speed for 3 minutes, and then let rest for 15 minutes, covered with plastic. Add the salt and mix for 5 more minutes on low speed. The dough should achieve full gluten development; check the gluten development by performing a window test (see page 10).

3. Transfer the dough to a floured wooden worktable and bulk ferment for 1 hour. Punch the dough down and fold it onto itself. Bulk ferment for 1 more hour.

4. Fold the dough onto itself one more time and let it bench rest for 15 minutes.

5. Divide the dough. For miche, scale out pieces that are 2.7 kg/5 lb 15.2 oz each.

For boules, scale out pieces that are 900 g/1 lb 15.68 oz each.

For bâtards, scale out pieces that are 675 g/1 lb 7.68 oz each.

6. **FOR SHAPING THE MICHE:** Round the dough into a ball, pulling toward you to tighten it. Transfer to heavily floured miche baskets; the smooth top goes in the basket first.

FOR THE BOULE: The shaping is the same as for the miche.

FOR THE BÂTARD: Shape into an oblong oval, then roll it up vertically toward you the length of the basket. Place the dough into a heavily floured basket, with the smooth side facing the basket. Bulk ferment at room temperature for 2 hours, covered with plastic.

7. Retard overnight in the refrigerator.

8. Pull the dough out of the refrigerator 1 to 2 hours before baking and check the proof. The dough should spring back when you apply gentle pressure to it with your fingertips.

9. **FOR BAKING THE MICHE:** Preheat a hearth oven to 255°C/490°F. Flip the baskets onto the loader and gently let the dough come out. Make sure that all the loaves are evenly spread out; score the dough as desired. Load the oven and press the steam button for 5 to 10 seconds, depending on the oven. Lower the temperature to 200°C/390°F. Bake for 25 minutes, and then open the vent and bake for 10 to 15 more minutes or until the bread reaches an internal temperature of 93°C/200°F. Take the bread out of the oven with a peel, and then slide it onto a metro shelf to cool.

FOR BAKING THE BOULES AND BÂTARDS: Preheat a hearth oven to 255°C/490°F. Flip the baskets onto the loader gently, making sure that all the loaves are evenly spread out; score the dough as desired. Load the oven and press the steam button for 5 to 10 seconds. Bake for 20 minutes, and then open the vent and bake 10 to 15 more minutes or until the bread reaches an internal temperature of 93°C/200°F. Take the bread out of the oven with a peel, and then slide it onto a metro shelf to cool.

note This recipe makes 5 miches at 2.7 kg/5 lb 15.2 oz, 15 boules at 900 g/1 lb 15.68 oz, or 20 bâtards at 675 g/1 lb 7.68 oz.

garnished sourdough

The garnish for a flavored sourdough is added during the last minute of mixing. The amounts of garnish are for 13.5 kg/29 lb 12.16 oz of dough, and the breads can be shaped into any of the previously described shapes (miche, boule, and bâtard).

garnish	amount	procedure
Chorizo	1.15 kg/2 lb 8.48 oz	Cut the chorizo into small dice, then render it in a hot sauté pan and cook it until crisp. Transfer to paper towels and pat dry to remove excess fat. Let cool before adding it to the bread.
Bacon and caramelized onions	Bacon: 900 g/1 lb 15.68 oz Caramelized onions: 900 g/1 lb 15.68 oz	Place the bacon on a sheet pan lined with a wire rack. Bake at 160°C/325°F for 10 to 15 minutes or until crisp. Once the bacon has cooled, break it into small pieces. Thinly slice the onion. Cook it in a sauté pan with very hot oil until the onions turn brown (caramelize).
Wild mushrooms	Black trumpet mushrooms: 400 g/14.1 oz Wood ear mushrooms: 400 g/14.1 oz Porcini mushrooms: 400 g/14.1 oz	Chop the mushrooms coarsely. Cook in a sauté pan with very hot olive oil until tender. Season with salt and pepper as they cook. Pat dry with paper towels and allow to cool before adding to the dough.

Sourdough Miche