The objective of this chapter is to help you understand how chemical leaveners work; not just baking powder and baking soda, but cream of tartar and other leaveners. We also need to know the mixing methods associated with these leaveners. The first part of this chapter addresses the leaveners and how they work. The second part of the chapter addresses mixing methods with recipes associated with each method.
**Part 1: Chemical Leaveners and How They Work**

With yeast as an organic leavener, tiny organisms create carbon dioxide to lift the dough. With the chemical leaveners—baking powder, baking soda, and cream of tartar—powerful chemical reactions create carbon dioxide to lift the batter. In this chapter, you will learn how those chemical reactions occur and how they leaven our baked goods.

**Baking Soda**

Baking soda is a powerful alkaline used primarily to leaven cookies, muffins, and cakes. Because it is alkaline, it reacts with acids in a batter as soon as it is mixed causing bubbling and a thickening of the batter. It does not require the heat of the oven to start the leavening process.

To understand how baking soda works, try this experiment. (Actually, try this with the kids or grandkids and teach them about chemical reactions.) Put a little baking soda in a cup. Add a little water. As shown in the first picture, there are no bubbles. Now add a little lemon juice to the water and soda mixture. Immediately, you will have a chemical reaction with gas bubbles fizzing out of the cup.

Carbon dioxide bubbles are formed as soon as the alkaline leavener comes in contact with the acid in the batter. To protect these fragile gas bubbles, do not stir the batter any more than is necessary. Unless the batter is very thin, it will hold the gas bubbles for some time and will not need to be baked immediately. In very thin batters, such as pancake batters—especially as they are stirred—the gas bubbles may collapse and the batter may need to be rejuvenated with more baking soda.

Generally, only recipes containing an acid call for baking soda. If there is no acid in the batter, there is no chemical reaction. Buttermilk, juices, unalkalized cocoa (Dutch cocoa has been alkalized and is not acidic), and molasses are common acids used to react with soda. The reaction of the alkaline baking soda with an acidic batter has two effects: it creates the carbon dioxide bubbles that leaven the batter, and it neutralizes the acid in the batter. Neutralizing the acid changes the taste—buttermilk, for example, no longer has its characteristic acidic tang.

Typically, recipes use ¼ teaspoon baking soda for each cup of flour. Very heavy batters or very acidic ones may use more. Occasionally, drop cookies call for more baking soda but that is to allow the cookie to brown more easily since a batter with a lower pH will brown quicker.

In the practice recipe, New England Hermits, buttermilk is used as an acid to react with baking soda. The baking soda neutralizes the buttermilk and the acidic buttermilk flavor is not apparent. The recipe calls for one teaspoon of baking soda for 3 ½ cups of flour.

**Baking Powder**

While baking soda is alkaline, baking powder is a mixture of an alkaline baking soda and acids designed to create a neutral compound. It therefore reacts with itself using the moisture of the batter as a catalyst. Like baking soda, this reaction creates carbon dioxide bubbles. It is designed so that it will not appreciably alter the pH of the batter or leave an aftertaste as baking soda will.

The baking powder generally used in the kitchen is double-acting: it reacts at room temperature in the presence of moisture and again in the oven in the presence of heat. The result is the extra lifting power necessary to make a cake light and airy.

Different brands of baking powder will react differently depending on the acid-alkaline mixture used. A slow acting baking powder will have little reaction to moisture alone, but will react rapidly when heated. A fast-acting baking powder will react significantly as soon as it is mixed with water.

Again, try an experiment. Add cool water to baking powder. If you get only a few bubbles, you have a slow acting baking soda. Now put your baking powder solution in the microwave. As it heats up, you will see a very rapid expansion of bubbles.

(Incidentally, with the baking powders that we experimented with, we got some reaction with a very strong acid like lemon juice but not nearly the reaction that we found with baking soda.)

Often a weakly acidic recipe will call for both baking soda and baking powder. The baking soda will react with the acid in the batter but the reaction will not be strong enough and is bolstered with the extra baking powder.

**Cream of Tartar**

Cream of tartar is a by-product of the wine-making industry and is derived from tartaric acid. As an acid, it is the counterpart to baking soda and when the two are combined in the presence of water, they create a chemical reaction which produces carbon dioxide. Therefore, most recipes that call for cream of tartar also call for baking soda. In some recipes, cream of tartar is used to increase the acidity in the batter to preserve the tang of buttermilk or the taste of an acidic juice used in conjunction with baking soda.

**Other Leaveners**

There are other chemical leaveners, though they are rarely used in today’s kitchens. In addition, mechanical means are used for leavening. Creaming butter and sugar together entrains air in the batter. Steam is used to lift products. Egg whites are whipped to capture tiny air pockets and thereby lighten products.
In this section, we will learn about three mixing methods using chemical leaveners.

- **The Muffin Method**
- **The Creaming or Cake Method**
- **The Biscuit Method**

Muffins, quick breads, and cakes are mixed with either the muffin method or the creaming method. In the creaming method, we cream the fat (butter or shortening) with the sugar until light and then add the other ingredients. Many cookies use the creaming method. In the muffin method, we mix the liquids and the dry ingredients separately and then stir them together until just combined. While the recipe will specify one method or the other, there is no reason why you can’t use both and see which you like best. The biscuit method involves cutting butter or another fat into a flour mixture before the liquids are added. This method is used primarily for biscuits, scones, and some desserts. If you master these three mixing methods, you will be prepared for nearly all recipes using chemical leaveners.

In Part 3, we will learn about making specific products with illustrative recipes.

### The Muffin Method

The muffin method is used for making muffins, quick breads, and some cakes. It is quick and easy. Mix the dry ingredients together. Mix the wet ingredients together (including the eggs) and then add the wet mixture to the dry mixture immediately as set forth in the recipe.

1. Whisk all the wet ingredients together, including the eggs and oil or melted butter.
2. Whisk the dry ingredients together.
3. Add the wet ingredients to the dry ingredients. Stir with a spatula until just moistened.
4. Place in tins and bake immediately as set forth in the recipe.

### Busy morning tomorrow? Use the muffin method.

One advantage of the muffin method is that both the dry and the wet ingredients can be mixed the night before. Store the wet ingredients in a sealed container in the refrigerator and then add them to the dry ingredients in the morning and you’re ready to bake. You’ll save time on busy mornings.

### The Creaming Method

The creaming method is the other major mixing method used in many muffin, cookie, and cake recipes. With this method, the sugar is creamed into the fat (butter, margarine, cream cheese, or shortening) to help aerate the batter. These little pockets expand with steam in the hot oven and with the leaveners, lift the muffin, cookie, or cake.

The creaming method is easy to master and opens a wide array of recipes for you to bake. This method works best with an electric beater or mixer while the muffin method works best by hand. The creaming method has two advantages: The sugar and fat are well-dispersed in the batter, and the entrained air tends to make for a light, fine crumb in the muffins. The creaming method makes for light, airy muffins though maybe not as tender as the muffin method.

In the creaming method, place the butter or shortening in the mixing bowl of your electric mixture. Add the sugar, spices, and salt and cream the mixture together with the paddle attachment of the mixer. (Of course, recipes that call for oil instead of butter or shortening cannot be creamed unless you substitute butter or shortening.) The objective is to drive the sharp sugar crystals through the butter or shortening creating tiny voids of air in the mixture. This entrained air will help the muffins rise.

### Steps in the Creaming Method

1. With the paddle attachment of an electric mixer, cream together the butter or shortening and sugars, spices, and salt until light.
2. Add the eggs one at a time, creaming after each.
3. Add the liquid ingredients and stir them in. Do not over-stir or you may reduce the entrained air in the creamed mixture.
4. Mix the flour and leavenings together and then add them to the creamed mixture. Mix until just combined.
5. Place in tins or on trays and bake immediately as set forth in the recipe.

### The Biscuit Method

The biscuit method is used in most scone and biscuit recipes plus many dessert and pastry recipes. It is sometimes called the pastry method because it incorporates the same technique as for mixing pie dough. (There are some biscuit recipes that call for using the creaming method but those biscuits turn out to be more cake-like.)

With this method, the butter or shortening is cut into the flour mixture with a pastry knife and then the liquids are mixed in just until combined. In the heat of the oven, the butter melts, the water in the butter creates steam, and the product rises into flaky layers.

You will need a pastry blender (sometimes called a pastry knife) or food processor to mix this. (Many recipes indicate that you may cut the butter in to the flour with two knives. Maybe I lack dexterity but I have trouble doing so.)

### Steps in the Biscuit Method

1. Measure the dry ingredients into a medium-sized bowl. Whisk them thoroughly to evenly disperse the ingredients.
2. Cut in the shortening, margarine, or butter with a pastry blender until the mixture is granular with particles no larger than kernels of grain. It is important to keep the butter cold so it isn’t incorporated into the flour too early. You’ll want the butter to melt in the oven so the steam can create light, flaky biscuits.
3. Combine the liquid ingredients in another bowl.
4. Add the liquids to the dry ingredients. Stir the mixture together with a fork until the dough begins to agglomerate.
5. Remove the dough to a counter lightly dusted with flour. Knead it by patting the dough flat and folding it in half. Turn it ninety degrees and repeat the process. Continue doing this for a couple dozen times until the mixture is kneaded together. Do not over knead.
6. Cut the scones or biscuits to shape and bake.

### Why use a pastry blender?

You can’t make baked goods such as biscuits, scones, pie crusts, and muffins without a pastry blender—at least you can’t do so easily. If there is a key to success with the biscuit method, it is this: cut the butter in thoroughly—the mixture should look granular with no large particles—and use very cold butter. Generally, the best way to truly incorporate the butter without mashing it into oblivion is by using a pastry blender. The goal is to get the dough into the oven before the butter melts. So far in this chapter, we have examined the chemical leaveners and how they work. In part two, we reviewed the major mixing methods that are used with chemical leaveners. Now in this section, we will learn how to make particular types of products using chemical leaveners and the methods we learned in Part 2. Finally, in this part, we will examine recipes that illustrate these methods.
Part 3: Learning to Bake with Leaveners

How to Bake Quick Breads

It’s no wonder quick breads are so popular. They are easy, fast—as the name implies, nearly foolproof, versatile, and oh, so good. We commonly know them as sweetened loaves with fruit or nuts, somewhere between yeast breads and cakes in texture and sweetness. They are leavened with baking powder and baking soda. Banana bread and date nut bread are typical though some books list recipes for savory varieties.

Quick breads have less sugar and less fat than cakes. The nuts often found in quick breads add to the fat content. The fruit adds to the moisture as well as the flavor. Because quick breads tend to be drier than cakes, they are often spread with butter, cream cheese, or jam. Peanut butter is one of our favorite toppings.

Quick breads tend to be more dense and moist than muffins though the batter for quick breads can be baked in muffin tins. Generally, muffin batter is thinner than quick bread batter.

Quick breads are wonderfully versatile, appropriate whenever the richness of a cake is undesirable. They are often served at breakfast and brunch, for snacks, and they finish a meal well in place of a sweeter dessert. When used for a dessert, they can be topped with ice cream or a syrup. Slices can be toasted or dipped in eggs and made as French toast. They make great sandwiches—though a bit fragile unless “stuck” together with cream cheese or peanut butter. Try a fruit filled quick bread topped with shavings of ham or turkey.

There are two methods for mixing quick breads: the creaming method and the muffin method, both of which were covered in the previous part of this chapter. If you need to review those methods, you can do so here. In review, with the creaming method, sugar and fat (butter, margarine, or shortening) are beat together to entrain air in the mixture and provide added lift to the batter. With the muffin method, the liquids are combined in one bowl, the dry ingredients in another, and then the two are mixed together. The creaming method tends to make a more cake-like bread.

Pointers for Success with Quick Breads

1. Do not over mix. Over mixing will develop the gluten and make the bread tough instead of tender.
2. Choose low gluten flour, either pastry or all-purpose flour. Bread flour will make a tough loaf.
3. Do not scoop the flour. Sift or whisk the flour to make it light and fluffy, not packed, then spoon it into the measuring cup.
4. The creaming method produces a more cake-like product and is well-suited for those recipes that have a high fat or sugar content. Consider the creaming method for those recipes that call for more than four tablespoons of butter per loaf.
5. Bake soon after mixing before the effect of the leavenings begins to dissipate.
6. If you use dry milk in your recipe, add it to liquid ingredients so that it can be stirred and thoroughly dissolved.
7. Commercial muffins tend to be very high in fat and sugar—more like a tea cake than a bread. Your quick bread should be more bread-like, and not as rich as commercial muffins.
8. Grease pans thoroughly and consider dusting the pans with flour as well. (If you use butter, always dust your pans to absorb the water in the butter.) With the high sugar content, the loaves tend to stick in the pans. Non-stick pans are helpful.
9. Breads are easier to remove from the pan if they set for five or ten minutes before removing the bread.
10. Test for doneness by inserting a toothpick into a crack in the center of the loaf. If the bread is done, the toothpick should come out clean.
11. Quick breads are best if they are tightly wrapped and stored in the refrigerator overnight. After the bread has completely cooled, wrap it tightly in plastic or foil. As the bread chills, both the flavor and the moisture permeate the bread. The bread can be stored in the refrigerator for five to seven days.
12. Quick breads can also be frozen. Place the wrapped breads in freezer-grade plastic bags and freeze them for up to three months. When ready to use, thaw the loaves in the refrigerator while still wrapped.

The importance of sifted flour

Sifting the flour aerates it and carries some air into the recipe. More importantly, a cup of sifted flour weighs much less than a cup of scooped flour, maybe 20 to 30% less. If you scoop flour before you level your cup, you will add too much flour to your recipe.

You can also whisk the flour until it is light and then spoon it into the cup. It’s a close approximation of sifted flour. The best solution is to weigh the flour instead of measuring by volume.

Troubleshooting Tips for Quick Breads

1. Cracked top: A cracked top is desirable and not a fault. Tunnels and voids: Tunnels and voids in the bread are a symptom of over mixing. Mix only until the dry ingredients are moistened. Some lumps may remain.
2. Tough texture: A tough texture instead of a tender texture is another symptom of over mixing. Occasionally, too high of baking temperature will cause toughness.
3. Soggy texture: If the batter is left for too long before baking, it may be soggy or sunk in the middle. If the there is too much liquid or not enough leavening, the bread may be soggy.
4. Coarse, crumbly texture: The bread should be moist and dense. Too much fat or too much leavening will cause the bread to be crumbly.
Pointers for Success with Muffins

To make perfect muffins, employ the techniques outlined here along with the techniques described in the mixing methods:

1. In preparation, grease the muffin tins. We like the spray oils from an aerosol can to reach the corners of the tins. Be sure to cover the top edges where the muffins will flow when baking. (You can use paper liners but since the batter adheres slightly to the paper, you will have slightly less volume to the muffins.)

2. Set the oven to preheat. Temperature is one of the secrets to those nicely domes muffins that you find in the better bake shops. Commercial ovens use precise heat settings and timers. In the kitchen, we can approximate those results by:
   a. Making sure that the oven is completely heated before baking. We like to let the oven sit at full temperature for at least ten minutes before baking so that the heat is well-absorbed into the structure of the oven.
   b. Closing the door as quickly as possible to keep the heat trapped.
   c. Setting the temperature at a higher initial setting and lowering the temperature later. The higher heat creates a burst of steam that lifts the batter.
   d. Placing the muffins in the upper third of the oven where it tends to be hotter and the heat more constant.

3. Always measure flour precisely using a scale if you have one. Muffin recipes are designed for the right consistency, you can completely heated before baking. We'll share

4. To make cake-like muffins, use a lower protein flour—cake or pastry flour. Higher protein all purpose or bread flours will make a muffin that is chewier and more bread-like.

5. If you are using fruit in your muffins, fold them in gently at the end of your mixing with a minimum number of folds. Fruit crushes easily in the thick batter and the juice will stain the batter.

6. Fill the muffin tins with a large spoon or ice cream scoop. Make sure that the muffin tins are evenly filled so that they bake evenly. Most recipes direct that the muffin tins be filled 2/3’s full to allow room for expansion. If your batter is at the right consistency, you can completely fill the tins for a nice dome on the muffins. (Our mixes are designed for full tins.)

7. Bake the muffins until they are a light golden brown. The muffin top should be hotter and the heat more constant.

8. It is easy to tear apart hot muffins trying to lift them from the tins. Instead, let the muffins sit for a few minutes and you should be able to easily lift them out intact. An icing spatula makes it easy to remove the hot muffins as the tip will bend around the bottom of the muffins to release them. Place them on wire racks to continue cooling.

9. Muffins are best served hot and do not keep well beyond the first day. Freeze any extras.

How to Make Biscuits

I grew up in the West. My mother made biscuits often but always for breakfast. (Though occasionally she made “Pigs in a Blanket” by folding sausage and cheese into the biscuit dough before baking. We’ll share the recipe later in this chapter.) Then I went to the South for two years. Those good people made an art of biscuits and served them for dinner and lunch as well as breakfast. I fell in love with the South and most things southern, including those tall, light biscuits. In this section, we’ll teach you how to make your own tall, light biscuits.

Here are the basic steps to making those great biscuits.

1. Preheat the oven to 425 degrees. It is important that you have a hot oven. The hot oven creates a burst of steam that helps lift the biscuits. Oil a baking sheet.

2. Measure the flour by scooping some into a bowl and then spooning the flour into the measuring cup. If you measure packed flour by scooping, you will have too much.

3. Add the leavening, sugar, salt, and any other dry ingredients to the flour and stir in those ingredients.

4. Cut the cold butter into chunks. The butter should be rock-hard. If you are using shortening, it will mix better if chilled before use. Slice the cold butter or shortening into the flour mixture using a pastry knife. Work the butter into the flour mixture until you have a coarse, grainy mixture.

5. Make a well in the middle of the flour and pour the buttermilk or other liquids into the flour mixture. Stir until just moistened. Remove the dough to the counter and work it until it just comes together. As you work the dough, fold it
Pointers for Success with Biscuits

1. Use a low protein flour. We prefer unbleached pastry flour.
2. Don’t over mix the dough. Over-mixing the dough will develop the gluten and make chewy, rather than flakey, biscuits.
3. Roll the dough to a uniform thickness so that biscuits will bake evenly.
4. Space the cuts as close together as possible. Reworked scraps will not be as tender as the first cut biscuits since the dough has been worked more. Consider cutting squares or triangles so that you have fewer scraps. If you do so, use a ruler for uniform biscuits. If you use a round cutter, don’t twist the cutter as you cut out the biscuits; press the cutter straight down.
5. Make the biscuits of uniform size and shape so that they will bake consistently. Protruding bits of dough can be pushed back in with a wet finger.
6. Use a greased or parchment paper-lined baking sheet.
7. If you want crusty biscuits, place them about ½-inch apart. If you want soft-sided biscuits, place them closer and break them apart after baking.
8. For browner biscuits, brush the tops with butter or milk. Do not over bake your biscuits.
9. For taller biscuits, bake as quickly as possible after forming. That is especially important if you are using baking soda and buttermilk for part of the leavening.
10. Cool the biscuits on wire racks.

Pointers for Success with Scones

1. Use a ruler. If you would like nice, neat scones, use a ruler both as a straightedge to cut and to measure equally-sized scones.
2. You can bake your dough in a single baking sheet.
3. Scones are best fresh out of the oven. Patting the edges with your fingers melds them together into a combined mass.
4. Leave the cut edges of the scones alone. Don’t over-bake your scones. Over-baking for even a minute or two will dry your scones out. As soon as the edges begin to turn brown, remove them from the oven. Immediately, place the scones on a wire rack—the hot pan will continue to dry the scones.
5. Use a ruler. If you would like nice, neat scones, use a ruler both as a straightedge to cut against and to measure equally-sized scones.
6. Leave the cut edges of the scones alone. Patting the edges with your fingers melds the edges so that the scone will not rise as nicely or have a flakey, layered structure.
7. Don’t over-bake your scones. Over-baking for even a minute or two will dry your scones out. As soon as the edges begin to turn brown, remove them from the oven. Immediately, place the scones on a wire rack—the hot pan will continue to dry the scones.

Ah, there’s nothing like a tender, steaming scone in the morning. (Pronounced “skawn” like “fawn” or “scone” like “tone”—Webster says either is okay.) They’re quick, they’re easy, and with a few tips, they are absolutely delectable.

Most scones are made using the biscuit method of mixing. Scones are among the easiest and quickest of breads. Once you get the ingredients assembled, most recipes only require fifteen minutes of prep time and another fifteen minutes or so of baking time. A mix is even quicker.

But there are some keys to making those flakey, tender scones that you’ve been dreaming about.

1. Scones can be frozen for up to three months. Reheat them at 350 degrees for 10 to 15 minutes. Probe the inside of the scone to make sure that it is warm.
2. You can bake your dough in a single flattened loaf like a bannock.
3. Scones are best fresh out of the oven. Recipes with more butter keep fresher longer.

Why do scone ingredients need to be kept so cold?

The objective is to keep the butter a solid and not let it melt into a liquid. If your dough is kept cold, it will have little bits of dispersed butter. In the heat of the oven, that butter melts into the dough but leaves pockets and layers in the scones.
How to Make Cornbread

You can tell that we love cornbread. There’s so much you can do with it—think of it as an empty easel, adding the flavors and colors that fit your fancy. Did you know there are different types of cornbread? When you know which type you’re making, it becomes easier to anticipate the finished cornbread or modify a recipe to match your family’s taste.

- Sweetened cornbread: This is Yankee cornbread, slightly sweet to the taste. Look for one or two tablespoons of sugar in the recipe.
- Southern cornbread: This is the classic, traditional cornbread with just a teaspoon or two of sugar (and in some cases, none). Drizzle honey or syrup over this cornbread or serve it with jam.
- Flourless cornbread: Flourless cornbread relies on the proteins in eggs to provide structure instead of the starches in flours. Most cornbread recipes have about the same amount of flour as cornmeal.
- Sweet or savory cornbread: You can mix sweet or savory additions into your cornbread. In this chapter, we will use bacon, cheddar, peppers, and onions as savory additions. You could also try adding ingredients like blueberries, apples, nuts, and dried fruit to help spice up your cornbread.
- Yeasted cornbread: Yeasted cornbread is chewy and wonderful. The gluten in the bread flour is developed so that it has a texture more like bread than cornmeal. Anadama Bread has a small portion of cornmeal added.

Pointers for Success with Cornbread

Cornbread has been nominated the official American Bread, and why not? It’s original to the Americas (corn originated in the New World). And certain regions have even taken to adopting certain types and variations as their own. Whatever your preference, the following tips and techniques will help you build better cornbread.

1. Always check your cornmeal for rancidity before baking. Rancid cornmeal will smell stale and musty; good cornmeal will have a sweeter smell.
2. When mixing batter for cornbread or muffins, put away your electric mixer. Mixing by hand helps eliminate over mixing. It is desirable to have a few lumps in the batter. They will hydrate during baking and the lumps will help give a suitably craggy appearance to your breads.
3. Once moistened, work quickly with the batter. The moisture will activate the leaveners in the batter.
4. Cornbread does not keep well. It is best used on the day baked. Store leftovers wrapped in plastic and then aluminum foil and placed in the refrigerator. Cornbread can be frozen for six weeks.
5. Use old-process cornmeal instead of degeminated cornmeal when available. Cornmeal with the germ should be stored in the refrigerator for up to six months. If you have more old-process cornmeal than you will use in six months, freeze part of it. It will keep in the freezer for over a year.
6. If you are making cornmeal for stuffing, it can be baked up to three days ahead. Crumble it and keep it in an airtight bag. Consider adding sage to cornbread batter.
7. Consider substituting whole wheat flour for white flour. With the grainy nature of cornmeal, your kids won’t even know that you slipped whole wheat in on them.
8. Consider sugar a variable. A sweeter cornmeal will have 1/4 cup sugar or more for every one cup of flour and one cup of cornmeal. Many southern style cornbreads have little or no sugar.
9. When making corn muffins (or any muffins), partially fill any empty tins with water. The moisture will improve the muffins, the tins will heat more evenly, and cleanup is easier.
10. Many of us love crusty cornbread. A dark pan will make crustier cornbread than a light pan. For the crustiest cornbread, use a skillet.
11. Typical recipes call for cornmeal and flour in a one-to-one ratio. Some skillet cornbreads omit the flour and use extra eggs. These cornbreads are not only very good, they are good for you and an option for those who are gluten intolerant.

Chapter 4 The Secrets of Using Chemical Leaveners
**The Muffin Method—Blueberry Corn Muffins**

This recipe is typical of many recipes using the muffin method. It makes a great corn muffin loaded with blueberries. When you successfully make this recipe, you’ll be prepared for many similar recipes.

Since this recipe batter has little acid, it is leavened with baking powder. (The blueberries are acidic but are not available to the baking powder in the batter.)

Corn muffins and blueberries are a classic combination. In this recipe, the cornmeal is presoaked for a softer, less gritty texture. The not-too-sweet cornbread muffins set off the blueberries perfectly. While many corn muffins have more flour than cornmeal and are almost cake-like, this recipe maintains its cornbread roots with equal parts of each.

### Ingredients
- 1 1/4 cups cornmeal
- 1/3 cup very hot water
- 3/4 cup vegetable oil
- 3 large eggs, whisked
- 3/4 cup granulated sugar
- 1 teaspoon salt
- 1 teaspoon vanilla extract
- 1 1/4 cups all-purpose flour
- 1 tablespoon baking powder
- 1 cup fresh or frozen blueberries

### Directions

Preheat the oven to 425 degrees

1. Measure the cornmeal into a large bowl. Add the hot water and oil and set it aside to soak. Let it soak for fifteen to twenty minutes.

Baker's Note: Soaking the cornmeal before mixing alleviates the gritty texture sometimes found in cornbread. For a more corn-like flavor, use a coarse-ground cornmeal.

2. In the meantime, whisk the three eggs in another medium bowl. Add the granulated sugar, salt, and extracts. Stir until smooth.

3. Mix the flour and baking powder together in a medium bowl.

4. Add the egg and sugar mixture to the cornmeal mixture. Stir with a spatula until smooth.

Baker's Note: Measure the flour by first whisking the flour in the bag to lighten it and then spooning the flour into the measure before screeing it off with a straightedge. If you dip the flour from the bag, it will be more packed and dense and you will have too much flour in the recipe. Cornmeal does not pack as readily as flour and we do dip to measure our cornmeal.

5. Add the flour mixture all at once to the wet mixture. Stir with the spatula until just combined. Some lumps should remain.

Baker’s Note: This is the classic muffin method of mixing, adding all the dry ingredients to the wet ingredients and mixing with a spatula only until moistened. If you stir too much, you will develop the gluten and your muffin will be chewy instead of tender.

Do not use an electric mixer for this mixing.

6. Sprinkle the blueberries over the batter. Do not stir.

Spoon the batter into very well greased muffin tins or muffin tins lined with paper cups. Try to catch a few blueberries in each spoonful of batter. Fill the cups until full or almost full.

Baker’s Note: As you stir the blueberries into the batter, especially with frozen blueberries, the juice stains the batter. If you sprinkle the blueberries on top and spoon blueberries with the batter, you will reduce the staining.

7. Filling the cups full will help the muffins dome. If the temperature in the oven is hot enough and the sugar content is not too high, your muffins should rise into domes and not spread excessively.

8. Bake for five minutes at 425 degrees and then lower the temperature to 350 degrees. Bake for another 20 minutes or until the muffins just begin to brown. The baking time will vary depending on how well your oven retains heat after reducing the temperature.

Baker’s Note: The initial hot oven creates oven spring which helps the muffins dome. Most of the oven spring is created by steam in the batter.

9. If you are baking your muffins without liners, let the muffins sit in the tins for five to ten minutes before removing the muffins to finish cooling on wire racks.

Baker's Note: Cornmeal muffins tend to be fragile. You may want to consider paper liners. Because the batter sticks to paper liners, you will not get as much lift with paper liners.
**The Perfect Banana Muffin Recipe**

We love rich, moist banana bread and we love muffins. But most banana muffins just don’t have enough bananas. So we set off to find the perfect banana muffin recipe. For us, the perfect banana muffin is very banana-rich but still light and cake-like and with a high dome. In our quest, we found what works and what doesn’t.

One thing we discovered was the riper the bananas, the better. Ripe bananas have more flavor. However, because bananas differ in their moistness as they ripen, you may have to add a couple tablespoons of flour to the batter. The batter’s consistency should be halfway between cake batter and cookie dough for drop cookies. It should be stiff enough that it can mound in your scoop. Both baking powder and baking soda are used as leaveners in this recipe.

**Ingredients**
- 2 1/4 cups all-purpose flour
- 1 tablespoon baking powder
- 1/2 teaspoon baking soda
- 1/2 teaspoon salt
- 2 1/4 cups ripe mashed banana
- 1/2 cup granulated sugar

**Directions**
1. Preheat the oven to 400°F.
2. Mix the flour, baking powder, baking soda, and salt together in a large bowl.
3. In another bowl, mix the mashed banana, sugar, sour cream, vegetable oil, egg yolks, and vanilla together.
4. Add wet ingredients to the dry and stir just until the ingredients are mixed well. Fold in the nuts.
5. Fill the well-greased tins nearly full. Use all the batter for six jumbo muffins. Sprinkle on the optional streusel topping.
6. Bake for 8 minutes at 400 degrees. Reduce the temperature to 350 degrees and bake for another 12 to 15 minutes or until done. Let sit for five minutes and remove the muffins from the pan to a rack to cool.

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**Toppings for Your Muffins**

Part of the fun of muffins is being able to top them to fit your fancy. In this section, we will show you how to top your muffins with everything from classic streusel toppings to cream cheese. If you use a muffin top pan, you can make just the tops.

### Brown Sugar and Nut Streusel Topping

**Ingredients**
- 1/2 cup walnut pieces
- 1/2 cup brown sugar
- 1/2 teaspoon cinnamon
- 1 tablespoon cold butter

**Directions**
1. Chop the walnuts into small pieces.
2. Stir the walnuts, brown sugar, and cinnamon together.
3. Cut in the cold butter with a pastry knife or two table knives.
4. Spoon the streusel mixture over the muffin batter evenly before baking.

### Cinnamon-Sugar Topping

**Ingredients**
- 1/2 cup granulated sugar
- 1 teaspoon good quality cinnamon
- 6 tablespoons butter, melted

**Directions**
1. Mix the cinnamon and sugar together in a bowl. When you remove the muffins from the tins, dip the still hot muffins in the butter and then roll the tops in the cinnamon sugar mixture.

### Orange Nut Streusel Topping

**Ingredients**
- 1/2 cup walnut pieces
- 1/2 cup brown sugar
- 1/2 teaspoon cinnamon
- 2 tablespoon orange zest (the zest from one large orange)
- 1 tablespoon cold butter

**Directions**
1. Chop the walnuts into small pieces.
2. Stir the walnuts, brown sugar, cinnamon, and orange zest together.
3. Cut in the cold butter with a pastry knife or two table knives.

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**Chapter 4 The Secrets of Using Chemical Leaveners**

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**Ingredients**
- 2 1/4 cups all-purpose flour
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- 1/2 teaspoon baking soda
- 1/2 teaspoon salt
- 2 1/4 cups ripe mashed banana
- 1/2 cup granulated sugar

**Directions**
1. Preheat the oven to 400°F.
2. Mix the flour, baking powder, baking soda, and salt together in a large bowl.
3. In another bowl, mix the mashed banana, sugar, sour cream, vegetable oil, egg yolks, and vanilla together.
4. Add wet ingredients to the dry and stir just until the ingredients are mixed well. Fold in the nuts.
5. Fill the well-greased tins nearly full. Use all the batter for six jumbo muffins. Sprinkle on the optional streusel topping.
6. Bake for 8 minutes at 400 degrees. Reduce the temperature to 350 degrees and bake for another 12 to 15 minutes or until done. Let sit for five minutes and remove the muffins from the pan to a rack to cool.
OAT-GRAHAM-BROWN SUGAR TOPPING

**Ingredients**
- 1/2 cup brown sugar
- 1/4 cup rolled oats
- 2 sheets of graham crackers, crushed
- 1/2 teaspoon cinnamon
- 6 tablespoons cold butter, cut in pieces

**Directions**
1. Mix the first four ingredients together.
2. Cut the butter in with a pastry knife.
3. Spoon on top of the muffins.
4. Bake as directed.

**Caramel Topping**

**Ingredients**
- 2 cups heavy cream
- 1 cup brown sugar
- 1 cup corn syrup

**Directions**
1. Mix the three ingredients in large saucepan. It’s going to boil up so fill the pan no more than one-third full.
2. Cook over medium high heat stirring nearly continually. The high heat shortens cooking time substantially but if not tended, you will burn your caramel.
3. Cook to a soft ball stage, 230 degrees. Remove from the heat and let cool.

**Cheddar and Bacon Cornbread**

We love cornbread—all kinds of cornbread. We classify cornbreads into two types: Rich cornbreads made without flour that use eggs to bind the bread and temper the cornmeal and more bread-like cornbreads with a high flour content. Both types are found in chapter one. Here, we included one more favorite recipe, a flourless, egg-rich recipe. It uses baking powder for leavening and the muffin method for mixing.

This skillet cornbread is made with bacon, cheddar, onion bits, and some red pepper or pimento for color.

**Ingredients**
- 1 1/4 cups yellow cornmeal
- 1 teaspoon baking powder
- 2 teaspoons sugar
- 1/2 teaspoon salt
- 4 large eggs
- 1 cup milk
- 1/2 pound bacon
- 1/2 red bell pepper, chopped and diced
- 1/2 medium sized onion, chopped and diced
- 1 1/2 cups grated cheese, cheddar or jack

4. Spoon the streusel mixture over the muffin batter evenly before baking.

**Cream Cheese Topping**

**Ingredients**
- 8 ounces cream cheese
- 4 tablespoons flour
- 1/2 teaspoon lemon extract
- 1 egg 1/3 cup sugar

**Directions**
1. In a small bowl, beat the cream cheese until soft
2. Add the other ingredients and continue beating until the mixture becomes soft and smooth.
3. Spoon the mixture over the top of the muffins.

**Oat-Graham-Brown Sugar Topping**

**Ingredients**
- 1/2 cup brown sugar
- 1/4 cup rolled oats
- 2 sheets of graham crackers, crushed
- 1/2 teaspoon cinnamon
- 6 tablespoons cold butter, cut in pieces

**Directions**
1. Mix the first four ingredients together.
2. Cut the butter in with a pastry knife.
3. Spoon on top of the muffins.
4. Bake as directed.

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This skillet cornbread is made with bacon, cheddar, onion bits, and some red pepper or pimento for color.

**Ingredients**
- 1 1/4 cups yellow cornmeal
- 1 teaspoon baking powder
- 2 teaspoons sugar
- 1/2 teaspoon salt
- 4 large eggs
- 1 cup milk
- 1/2 pound bacon
- 1/2 red bell pepper, chopped and diced
- 1/2 medium sized onion, chopped and diced
- 1 1/2 cups grated cheese, cheddar or jack
Macadamia White Chocolate Cookies with Raspberry Chips

We took a favorite macadamia white chocolate cookie recipe and added raspberry chips. With just a little tinkering, these cookies were fantastic. They are bright, colorful, and loaded with a flavor. These are special cookies for a special occasion.

**Ingredients**
- 2 cups all-purpose flour
- 1 1/4 cups quick oats
- 1/2 teaspoon baking soda
- 1/2 tablespoon baking powder
- 1/4 teaspoon salt
- 1/2 cup granulated sugar
- 1 cup butter
- 2 large eggs
- 1 teaspoon vanilla extract
- 1 teaspoon raspberry flavor
- 1 cup white chocolate chips
- 1 cup macadamia nuts, chopped
- 3/4 cup raspberry bits

**Directions**
Preheat the oven to 350°F.

1. Mix the oats, flour, baking soda, baking powder, and salt together in a large bowl. Set aside.
2. In the bowl of your stand-type mixer and with the paddle attachment, cream the sugar and butter together. Add the eggs and beat. Add the flavors.
3. Add the flour mixture to the wet mixture in the stand-type mixer bowl. Beat until combined. Add the nuts and raisins.
4. Make golf-ball sized mounds on a greased cookie sheet. Bake for eight to ten minutes at 375 degrees or until the edges of the cookies just begin to brown. Do not over bake. Remove to a wire rack to cool.

**The Creaming Method—New England Hermits**

Hermits are a heritage cookie originating in New England, a drop cookie filled with nuts and raisins, dates, or other fruits. The New Englanders often used favorite dry fruits steeped in liquor. These were hearty, long-lasting cookies that could be packed away and taken to sea. These are moist, spicy drop cookies that we find very good—but then, we like spicy cookies. If you like oatmeal raisin cookies, chances are you’ll like these. They are chock full of nuts and raisins. If you want to tone down the spices just a bit, omit the ground cloves.

**Ingredients**
- 3 1/2 cups all-purpose flour
- 1 teaspoon baking soda
- 1 teaspoon salt
- 1 teaspoon ground cinnamon
- 1/4 teaspoon nutmeg
- 1/8 teaspoon ground cloves (optional)
- 1 cup shortening
- 2 cups brown sugar
- 2 large eggs
- 1/2 cup buttermilk
- 2 cups chopped walnuts
- 1 1/2 cups raisins

**Directions**
Preheat the oven to 375°F.

1. Fry the bacon to a crisp, pat the grease from the bacon with paper towels, and crumble or chop the bacon.
2. In a large bowl, stir together the cornmeal, baking powder, sugar, and salt.
3. In a medium bowl, whisk the eggs then stir in the rest of the ingredients plus the bacon, reserving 1/2 cup of the grated cheese.
4. Form a well in the dry ingredients and pour the wet ingredients into the dry ingredients. Mix with a spatula until well combined.
5. Bake in a ten-inch, nonstick skillet for 20 minutes or until all but the center of the cornbread is set. Remove the cornbread from the oven and immediately sprinkle the reserved cheese over the cornbread to melt. Serve hot with butter and maple syrup.

Baker’s note: Cornbread tends to be dry if overbaked. This is a flourless recipe and relies on the eggs for structure. This is very much like baking a custard or a quiche. As it bakes it will set up with the center being the last to set. It is time to remove the pan from the oven when all but the center two inches is set. It will continue cooking in the hot pan after it comes from the oven.

**The Secrets of Using Chemical Leaveners**

Chapter 4

- Hermits are a heritage cookie originating in New England, a drop cookie filled with nuts and raisins, dates, or other fruits. The New Englanders often used favorite dry fruits steeped in liquor. These were hearty, long-lasting cookies that could be packed away and taken to sea.
- These are moist, spicy drop cookies that we find very good—but then, we like spicy cookies. If you like oatmeal raisin cookies, chances are you’ll like these. They are chock full of nuts and raisins. If you want to tone down the spices just a bit, omit the ground cloves.
- The mixture should be light and fluffy.
- Add the flour mixture and the buttermilk in three separate additions starting with the flour mixture, beating only until combined after each addition. Add the nuts and raisins.
- Make golf-ball sized mounds on a greased cookie sheet. Bake for eight to ten minutes at 375 degrees or until the edges of the cookies just begin to brown. Do not over bake. Remove to a wire rack to cool.

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- Make golf-ball sized mounds on a greased cookie sheet. Bake for eight to ten minutes at 375 degrees or until the edges of the cookies just begin to brown. Do not over bake. Remove to a wire rack to cool.
The Biscuit Method—Frosted Lemon Poppy Seed Scones

If you can make scones, you can make biscuits. The techniques are very similar. Review the section in this chapter about the biscuit method if need be.

Scones are wonderful for breakfast or brunch. Plain scones are not sweet and rely on butter and a fruit spread for extra moisture and sweetness. Most scones with frosting are a little sweeter to better complement the topping.

This is a classic English scone recipe with poppy seeds, lemon, and extra sugar added. It is topped with a lemon cream cheese frosting.

You’ve tried lemon poppy-seed bread, muffins, and pound cake—now try lemon poppy seed scones. Ample poppy seeds give these light, flaky scones a bit of crunch. The lemon cream cheese frosting in this recipe tops the scones off just right. Like all scones, these are best if eaten warm from the oven with plenty of thick frosting piled on top.

This recipe is leavened with baking powder since there are no acidic ingredients in the batter. Because it is a stiff dough, not a more flexible batter, the butter cut into the flour mixture is an important contributor to a light and airy texture.

**Ingredients**

- 2 1/2 cups all-purpose flour
- 1 tablespoon baking powder
- 1/4 teaspoon salt
- 1/3 cup granulated sugar
- 3 tablespoons poppy seeds
- 1/2 tablespoon lemon zest
- 6 tablespoons butter, ice cold
- 2 large eggs
- 3/4 cup heavy cream
- 2 ounces cream cheese
- 1 1/2 cups powdered sugar milk as required

**Directions**

Preheat the oven to 400 degrees.

1. Measure the flour, baking powder, salt, sugar, poppy seeds, and zest into a medium bowl. Stir to disperse ingredients.

   Baker’s Note: One-half tablespoon zest is about what you will get from a medium or small lemon. Do not scrape down into the white pithy part of the peel—it is very bitter.

2. Using a pastry blender, cut the chunks of butter into the dry ingredients until the mixture looks granular with butter pieces the size of wheat kernels.

   Baker’s Note: The trick to flaky scones is to keep the butter solid, not let the dough get warm enough that the butter melts. It’s the solid little pockets of butter that melt in the oven, bursting with steam, and create flaky, buttery pockets. Start with the coldest butter, work quickly, and handle the dough as little as possible.

3. Add the whisked eggs and cream and stir with a fork until the mixture starts to come together. Place the dough on the counter and knead with your hands only until the dough comes together.

4. Pat or roll the dough to a thickness of almost 3/4 inch. Use a sharp knife or cookie cutter to cut into desired shapes. Place the scones on a greased baking sheet. Bake for 12 to 14 minutes or until the tops begin to brown. Immediately remove them from the sheet to cool on wire racks.

   Baker’s Note: Do not pat the cut edges. The scone will rise in layers if the edges are not molded.

5. In a small bowl with an electric mixer, mix the cream cheese, lemon juice, and powdered sugar until smooth. Frost the warm scones and serve immediately.

   Baker’s Note: We made the frosting fairly thick so that we could pile it on the scones. If you prefer a thinner layer, thin the frosting to where it is just a bit runny. Drizzle it over the scones letting it drip down the sides.

Strawberry White Chocolate Scone

This is a traditional scone that is very loaded with chips and strawberries—one cup of inclusions for two cups of flour.

**Ingredients**

- 1 egg
- 1/3 cup buttermilk
- 1/2 cup white chocolate chips
- 1/2 cup strawberries

**Directions**

Preheat the oven to 400 degrees.

1. With a pastry knife, cut the butter into the dry ingredients until it is granular in appearance. Stir in the chips and strawberries.

2. Mix the egg and buttermilk together in a small bowl. Make a depression in the dry ingredients and add the liquid mixture. Stir with a spatula until moistened.

3. Dust the countertop with flour and turn the dough out. Fold the dough together until you have a single, large lump of dough. Pat it into a disk about 8 inches in diameter. Cut the disk into wedges and place them on an ungreased baking sheet with room around them to expand.

4. Bake for 11-12 minutes or until they are golden. Remove to a wire rack to cool. Serve while still warm.
Chapter 4 The Secrets of Using Chemical Leaveners

Exploring a New World of Biscuits!

Sweet and Savory—

The second recipe demonstrates how fruit and nuts can be combined in a biscuit to create new and interesting flavors. Try experimenting with substituting your own favorite ingredients and you'll be surprised by how well it turns out.

The last recipe is a savory recipe. Sharp cheddar and sautéed red pepper bits are added. But onions, chilies, bacon bits, diced ham, or anything else you desire could be added.

Have fun creating your own world of biscuits.

Easiest Buttermilk Biscuits

This is a basic buttermilk drop biscuit. Of course, you can add just a bit more flour and make cut biscuits.

Ingredients

- 2 cups all-purpose flour
- 2 teaspoons baking powder
- 1/2 teaspoon baking soda
- 1 tablespoon sugar
- 1/2 teaspoon salt
- 1/4 pound (one stick) cold butter
- 1 cup plus 1/2 tablespoon buttermilk

Directions

Preheat the oven to 425 degrees. Grease a baking sheet.

1. Measure the flour by scooping some into a bowl and then spooning the flour into the measuring cup. (If you measure packed flour, you will have too much.)

2. Add the baking powder, baking soda, sugar, and salt and stir these ingredients into the flour. Slice the cold butter into the flour mixture. Use a pastry knife or two kitchen knives to cut the butter into the flour mixture. Work the butter into the flour mixture until you have a coarse, grainy mixture. Stir in the cranberries, walnuts, zest, and spices.

3. Make a well in the middle of the flour and pour the buttermilk into the flour mixture. Stir until just moistened. The dough should be of a consistency like drop cookie dough or just a bit stiffer. If it is not moist enough, add another tablespoon of buttermilk.

4. Spoon the dough into twelve rounded mounds on the baking sheet leaving room for expansion.

5. Bake for 12 to 14 minutes or until the biscuits just begin to brown. Remove the biscuits from the baking sheet and place them on a wire rack to cool.

Cranberry Nut Biscuits

We took our basic buttermilk biscuit recipe for drop biscuits and added cranberries, nuts, spices, orange zest, and a little more sugar. It is not overly sweet; it's more like bread with fruit and nuts. If you want a sweet bread, increase the sugar to 1/4 cup.

Ingredients

- 2 cups all-purpose flour
- 2 teaspoons baking powder
- 1/2 teaspoon baking soda
- 2 tablespoon sugar
- 1/2 teaspoon salt
- 1/4 pound (one stick) cold butter
- 3/4 cup dried cranberries, chopped
- 1/2 cup walnut pieces
- 1 tablespoon orange zest
- 1/2 teaspoon cinnamon
- 1/4 teaspoon nutmeg
- 1 1/2 cups buttermilk or enough to make a soft batter

Directions

Preheat the oven to 425 degrees. Oil a baking sheet.

1. Measure the flour by scooping some into a bowl and then spooning the flour into the measuring cup. (If you measure packed flour, you will have too much.)

2. Add the baking powder, baking soda, sugar, and salt and stir these ingredients into the flour. Slice the cold butter into the flour mixture. Use a pastry knife or two kitchen knives to cut the butter into the flour mixture. Work the butter into the flour mixture until you have a coarse, grainy mixture. Stir in the cranberries, walnuts, zest, and spices.

3. Make a well in the middle of the flour and pour the buttermilk into the flour mixture. Stir until just moistened. The dough should be of a consistency like drop cookie dough or just a bit stiffer. If it is not moist enough, add another tablespoon of buttermilk.

4. Spoon the dough into twelve rounded mounds on the baking sheet leaving room for expansion.

5. Bake for 12 to 14 minutes or until the
biscuits just begin to brown. Remove the biscuits from the baking sheet and place them on a wire rack to cool.

**Cheddar Cheese Biscuits**

These are great biscuits to go with a bowl of soup on a cold winter day and, in our humble opinion, we think these are better than the cheesy biscuits you’ll find served in the national chain restaurants.

We took the standard buttermilk biscuit recipe and added sharp cheddar cheese and reduced the butter by half since the cheese provides fat to the recipe.

It’s hard to get enough cheese in a bread to make it really cheesy without a little help. We accented the cheese with a touch of white pepper, garlic, and mustard. The combination didn’t overwhelm the cheese and yet was piquant enough to not be bland.

**Ingredients**

- 2 cups all purpose flour
- 2 teaspoons baking powder
- 1/2 teaspoon baking soda
- 1 tablespoon sugar
- 1/2 teaspoons salt
- 1/4 teaspoon white pepper
- 1/4 teaspoon garlic powder
- 1/2 teaspoon ground dry mustard
- 4 tablespoons cold butter
- 1 1/2 cups grated sharp cheddar cheese lightly pressed into the measure
- 1/2 red bell pepper, diced and sautéed or steamed in the microwave until it is almost tender
- 1 3/4 cups buttermilk or enough to make a soft batter

**Directions**

Preheat the oven to 425 degrees. Oil a baking sheet.

1. Measure the flour by scooping some into a bowl and then spooning the flour into the measuring cup. (If you measure packed flour, you will have too much.)

2. Add the baking powder, baking soda, sugar, salt, pepper, garlic, and mustard and stir these ingredients into the flour. Slice the cold butter into the flour mixture. Use a pastry knife or two kitchen knives to cut the butter into the flour mixture. Work the butter into the flour mixture until you have a coarse, grainy mixture. (See picture.) Add the cheese and bell pepper.

3. Make a well in the middle of the flour and pour the buttermilk into the flour mixture. Stir until just moistened. The dough should be of a consistency like drop cookie dough or just a bit stiffer. If it is not moist enough, add another tablespoon of buttermilk.

4. Spoon the dough into twelve rounded mounds on the baking sheet leaving room for expansion.

5. Bake for 12 to 14 minutes or until the biscuits just begin to brown. Remove the biscuits from the baking sheet and place them on a wire rack to cool.

**Understanding Baking—How it works**

1. The hot oven gives the dough a burst of steam that helps make the biscuits light and airy.

2. The alkaline baking soda reacts with the acid buttermilk creating bubbles and a lighter texture. There is not enough baking soda to completely react with the buttermilk so the tangy taste of buttermilk still comes through.

3. The density in your flour mixture will affect the amount of liquid needed. If you spoon light flour into the measure, it should be about right for the liquid noted in the ingredients.

4. Make the biscuits of uniform size and shape so that they will bake uniformly. Protruding bits of dough can be pushed back in with a wet finger.