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Cakes

We've all heard the Mother Goose nursery rhyme, "Pat-a-cake, pat-a-cake, baker's man; Bake me a cake as fast as you can; Roll it, and prick it, and mark it with a 'B'; And put it in the oven for Baby and me!" Today cakes are a symbol of many ceremonies, from birthdays to weddings. They can be light like an angel food cake or dense like a fruitcake, and they can come in all colors, shapes, and sizes.

BASIC INGREDIENTS

Different cake batters are created by varying the ingredients and combining them in a certain way to form the structure of the cake. The possibilities are endless, but the basic ingredients of fat, sugar, eggs, flour, liquid, and sometimes a leavening agent are the common factors. Depending how these ingredients are combined, your cake will turn out delicious and with the desired texture. Cake baking requires that you measure the ingredients carefully. Varying the recipe can result in a different result than intended, so use the specified flour or fat called for in the recipe.

FAT

Shortening, butter, margarine, and oil are all considered fats and can be used in cakes depending on the desired texture. Besides adding flavor and moisture, fat combines with sugar during "creaming" to add lightness by trapping air that expands during baking. This makes the cake tender, forming a lighter crumb in the baked cake.

SUGAR

Sugar adds sweetness and flavor but also aids in browning, tenderizing, maintaining moistness, and preserving the shelf life of the cake. Sugar acts as a tenderizer by absorbing water, inhibiting flour gluten development, and incorporating air into shortening during the creaming process. It caramelizes under heat, providing cakes with a pleasing color and aroma. In the case of angel food cakes, sugar helps stabilize beaten egg whites to provide the basic structure of the cake.

EGGS

Eggs provide the structure for some cakes and help bind the ingredients together. Eggs also act as an emulsifier. By surrounding small particles of fat, the egg helps make the cake batter smoother, contributing to volume and texture. In addition, when eggs are beaten, they incorporate tiny air bubbles that expand with heat in the oven, contributing to volume. Eggs should be left at room temperature for about 30 minutes before use, as more air can be incorporated during mixing. Eggs also add moisture, color, flavor, and nutritional value. Generally, recipes call for large eggs. Additional eggs in a recipe produce a denser cake.

LIQUID

Cake batters may call for water, milk, juice, or extracts to add flavor and moisture. These ingredients are usually added with the eggs. A liquid is needed to dissolve the sugar and also contributes moisture.

FLOUR

Although the structure of cakes is affected by the flour used in your recipe, a more tender cake is made when little gluten development occurs. Most modern-day recipes call for all-purpose flour. Self-rising flour may also be used in recipes, but because it has added baking powder and salt, these ingredients must be eliminated from the original recipe. Some cake recipes call for cake or pastry flour. This flour has a low protein content. To make your own cake flour, sift together $\frac{3}{4}$ cup plus 2 tablespoons of all-purpose flour and 2 tablespoons of cornstarch. The use of pastry or cake flour will make for a more tender cake. Since measurement is so important, spoon the flour into the measuring device and level off for greatest accuracy.

BAKING POWDER AND SODA

Baking powder is a mixture of baking soda plus an acid. Most consumers use double-acting baking powder. It contains a fast-acting baking powder that reacts with the moisture in the recipe and a slow-acting baking powder that reacts with the addition of heat. If moisture is present, the acid reacts, causing the release of carbon dioxide, which causes the cake to rise. Too much leavening agent will cause air bubbles to be too big. They combine and burst, leading to a flat cake. Too little leavening agent will lead to a heavy cake.

SALT

Salt is used in cakes to enhance the flavor of the other ingredients. There is not a specific ratio for home baking, and the recipe may need to be adjusted if salted butter is used. Leaving salt out completely will leave your cake tasting a little off.

SPICES, FLAVORINGS, EXTRACTS, AND OPTIONALS

Spices, flavorings, and extracts, add flavor to cakes. Spices such as cinnamon, flavorings such as orange zest, and vanilla extract are usually added in small amounts. If adding nuts, raisins, or chopped fruits, toss them in flour first. This step helps prevent them from sinking to the bottom of the pan.

CAKE TYPES

Cakes can be divided into two main types: foam and butter (sometimes referred to as shortened). The differences in these types are how they are leavened or combined. A foam cake has a high egg-to-flour ratio that allows the cake to rise from air beaten into the eggs, egg whites, or whipping cream. Foam cakes are light and fluffy, and examples include angel food, chiffon and sponge cakes. Butter cakes require a chemical leavening agent such as baking powder or baking soda. These differences in leavening cause differences in textures. Butter cakes are more moist and dense. Butter cakes can be divided further by their mixing method. Three different methods are commonly used for butter cakes: creaming, mixing (or the one-bowl method), and a combination.

CREAMING METHOD

The creaming method involves beating the fat and sugar until a fluffy texture and light color is obtained. At this point, eggs are beaten into the mixture. The final step is to add the dry ingredients

and remaining liquids alternately in smaller amounts until all the ingredients are combined. As the cake bakes, the leavening agent, the trapped carbon dioxide from mixing, and the production of steam, allows the cake to rise. The creaming method is the most traditional method. Pound cakes are made by this method.

THE MIXING OR ONE-BOWL METHOD

The one-bowl method is faster than the creaming method but produces a denser product. Dry ingredients are combined in one mixing bowl and the liquid ingredients are added. After mixing, the dry ingredients and fat, the eggs, and the remaining liquid ingredients are added. The fat coats the flour, helping to produce a “melt-in-your-mouth” cake or a more open and less fine texture than a creamed cake.

COMBINATION METHOD

The combination method begins with eggs whipped in a separate bowl and then combined with the other creamed ingredients. The combination method allows for a lighter texture by adding additional volume from the whipped eggs.

WHISKING METHOD

Often the whisking method is used for sponge cakes. First, eggs, and sugar are whisked together for at least 10 minutes until the mixture has tripled in volume. Air provides the leavening agent, providing for a “lighter-than-air” texture. To prevent any loss of air, the flour is folded into the mixture.

RUBBING METHOD

The rubbing method is used for light fruitcakes. Fat is cut into small pieces then rubbed into the flour with the fingertips until the mixture resembles fine breadcrumbs, then the other ingredients are stirred in. Having cold but not too firm butter is important in this method.

MELTING METHOD

The melting method is used for moist cakes like gingerbread. The fat, sugar, and syrup are gently heated in a saucepan until just melted. When the mixture is cooled, the eggs and dry ingredients are stirred in.

EQUIPMENT

There are many choices when it comes to choosing a pan in which to bake your cake, from metal to glass, from round to square, from small to large. Shiny pans are recommended because they reflect the heat away from the cake to make a light brown crust. A nonstick pan will require you to reduce the baking temperature by 25°F because these pans absorb heat, causing the cake to bake and brown quicker. Follow the suggested pan size in your recipe to help ensure you have the best quality. If you use a pan that is too big, the cake will be flat and dry. In a pan that is too small, the cake will bulge with a rounded top or overflow the pan. Most pans include the size on the bottom of the pan, but you can measure it yourself using a ruler.

Preparing the pan correctly is essential to getting the cake out of the pan. The cake pan, including the corners, should be greased generously using a baking spray or shortening. Then dust the pan with flour and shake the pan evenly to coat. Turn the cake pan upside down over the sink to remove excess flour. Or, parchment paper can be cut to line the pan for easy removal. Special nonstick baking sprays that contain flour that work well are now available. Silicone baking pans, which need no prior

preparation to receiving the batter, also work well. The batter should fill approximately one-third to two-thirds of the cake pan to allow for the batter to expand.

OVEN TEMPERATURE

Before mixing, the oven should be preheated to the correct temperature. The temperature will affect the appearance and the moisture of the cake. An oven that is too hot will cause the edges to brown before the middle is completely done. If the suggested oven temperature does not provide the optimal product, try using an oven thermometer to determine if the oven temperature is correct.

BAKING

Bake your cake in the center of the oven. Check for doneness about 5 minutes before the recipe directions indicate. To check for doneness, the center should be checked using a toothpick. If the toothpick is clean or comes out with just a few crumbs from the center of the cake, the cake is done. A coated toothpick means the cake requires more baking; check about every 2 minutes until the cake is done.

COOLING

When baking is done, the cake should be properly cooled. The cake should cool in the pan for at least 10 minutes before removal. Next, the cake should be removed from the pan and placed on a wire rack for complete cooling. To remove a cake from the pan, run a serrated knife around the side of the pan to loosen the cake. Place a rack on top of the cake pan and turn the cake pan upside down onto the rack. To remove cake crumbs, brush with a food-safe brush. Cakes baked in a tube pan or small sized pans can be completely cooled in the pan on a wire rack. Once cooling is complete, decorator icing or frosting can be added. Instead of a thick, rich icing, try drizzling a fruit sauce or simply sprinkling with sugar. To split cakes before frosting, use a long strand of unflavored dental floss, fishing line, or sewing thread. Place the thread at the center of the cake and pull through slowly but firmly to cleanly cut through the cake.

NUTRITIONAL VALUE

The ingredients found in the largest amounts in cakes are flour, sugar, and fat. These ingredients will provide calories but very few essential nutrients. Combined with a glass of milk, a fruit sauce, or by themselves, cakes can be enjoyed as part of a healthful diet or as part of special celebrations.

EVALUATION

Besides flavor, cakes are usually judged based on appearance, texture, and moistness. The cake's shape should be symmetrical, with a level top that is not sticky or overly dry. The exterior should have a light brown appearance with the interior characteristic of the type. Most cakes should have a velvety smooth crumb with small air cells rather than large air cells, which is referred to as tunneling. The cake should be moist and tender or easy to cut without falling apart. The best part about the cake should be the pleasant aroma and flavor that is characteristic of the type. Since cakes are usually baked for a special occasion such as a birthday, wedding, or simply the end of a great meal, their flavor and appearance are meant to be enjoyed with friends.

Many cakes are finished with a frosting, icing, or glaze. Some are even elegantly decorated. If you are interested in learning more about decorating cakes, check with your local cake decorating supplier and take a basic class, or check online for ideas. Who knows? You may even become good enough to go into business for yourself.

NUMBER OF SERVINGS PER CAKE PAN

Use the chart below to figure how many servings you will be able to slice from different size pans or types of cakes.

SIZE AND TYPE OF CAKE	NUMBER OF SERVINGS
8- or 9-inch round pan	8
8- or 9-inch square pan	9
8- or 9-inch round pan, double layer	12 to 16
13 x 9 x 2-inch rectangle pan	12 to 16
10 x 14-inch angel food or chiffon pan	12 to 16
12-cup Bundt or pound cake pan	16 to 24

STORING CAKES

A finished cake can be stored at room temperature if covered loosely to allow for air circulation. However, if a whipped cream topping or cream filling is used, the cake needs to be stored in the refrigerator. Cakes that contain moist ingredients such as chopped apples, shredded carrots or zucchini, mashed bananas, pureed fruit should be kept in the refrigerator. For best results, only freeze cakes for up to two months in an air-tight container. Freeze frosted cakes until hard before tightly wrapping them. Unwrap and then defrost frozen cakes in the refrigerator. As with any food product, it is important to label the package with the product name and date.

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