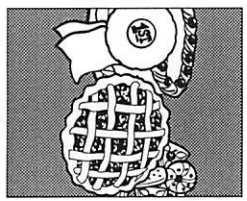


BAKED GOODS

JUDGING FOOD PRODUCTS

The preparation of appetizing foods necessitates a knowledge of what constitutes a satisfactory product, and it is desirable to have the ability to know the reason why certain products do not measure up to the standard.

As we see food which has been prepared we automatically judge it. Certain impressions are made regarding the general appearance, and if the product is tasted, other qualities will be judged in the same superficial manner. However, judging with a score card will necessitate a more thorough and critical examination with a definite record of the judgement. No discussion should be allowed while judging is in progress, as a decision may be biased.

A general discussion should follow the independent scoring which will emphasize the standard comparison with the good and the poor points of the product. This is the most valuable procedure to set up a desirable standard for each product.

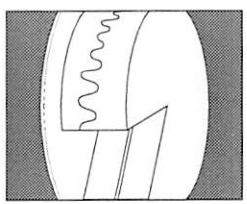
When the products to be judged have variants the judge should not know the exact variant in each product. This will enable her to give and unbiased opinion. For example, in asking persons to judge your muffins a proper statement is: "Please judge these bran muffins. Kindly score and record your judgement and then I would appreciate some verbal comments and suggestions for improvement."

If much judging is done, a little bread, cracker, apple, or drink of water between samplings helps free the mouth from definite flavors. Do not sip coffee, tea or other beverages.

Several types of score cards follow. Modifications of these may be prepared. The type should be chosen according to the product, time for judging, and the use which is to be made of results. Variations in each type may also be made, depending upon the information wanted.

DEFINITIONS OF TERMS USED IN SCORE CARDS

Appearance: Aspect of contour
Color: A shade, tint, or hue
Consistency: Degree of firmness, density, viscosity, resistance to movement
Flavor: Quality which affects the relish, zest, or savor; closely associated with aroma
Lightness: Well leavened, not dense, having low specific gravity
Moisture content: Degree of moisture
Size: Height, diameter or circumference, bulk, proportionate dimensions
Taste: The sense by which acid, bitter, salt, and sweet are ascertained by contact with the taste buds of the tongue
Tenderness: Ease with which anything can be cut, broken, or masticated
Texture: Structural quality, disposition of different ingredients or parts in relation to each other



CAKES

CAKES

Cakes are of two types: those made with fat, called butter or shortened cakes, and those made without fat, called sponge cakes. Cakes made with fat include plain - yellos, white, chocolate, spice, and pound cakes. A great many recipes are available for each of these cakes, but a careful study will show that the recipes for a given type call for the same basic ingredients. Sponge cakes include angel cakes, yellow sponge cakes and "mock" sponge cakes. Chiffon cakes contain oil, but resemble sponge cakes.

Cakes With Fat: A shortened cake should have a delicate sweet flavor and a soft velvety crumb. The top should be slightly rounded - not peaked - and the air cells thin-walled, small, and evenly spaced. If butter is used, its pleasing taste should be discernible in the cake.

The old pound cake formula (1 pound each of butter, flour, eggs, and sugar) has served as the starting point for many variations. This formula has been modified so that shortened cake batter now has a structure very different from that of the old-fashioned pound cake.

Variations: Variations of shortened cakes may be made by adding such flavoring materials as chocolate, cocoa, spices, and fruits. A second method of varying these cakes is by using only the whites or the yolks of the eggs, as is done in a gold cake or a white cake.

Chocolate cakes, a popular variation, can be made with either cocoa or chocolate. These cakes range in color from light brown to dark mahogany red. When chocolate is used, it should be added with the fat ingredient, but cocoa should be sifted with the dry ingredients.

The color of the chocolate cake varies with the kind and amount of chocolate or cocoa and the type and amount of baking powder used. If high alkaline treatment cocoa is used, baking soda should be reduced. The acidity or alkalinity of the batter is also a factor.

A deep reddish color is characteristic of a chocolate cake if soda is used in excessive amounts. Studies showed that when soda was used in combination with phosphate or tartrate baking powder the color was reddish but when soda was combined with sodium aluminum sulfate phosphate baking powder the color of the cake was a deep brown.

It has also been noted by researchers that in chocolate cake recipes where relatively small amounts of soda replaced part of the baking powder, the finished cakes had a more velvety crumb, higher compressibility, and greater volume than chocolate cakes made without soda.

CAKE (WITHOUT FAT) EXHIBITS
Judging Standards

OUTSIDE APPEARANCE 30%

- Shape is symmetrical with a flat or slightly rounded top; without low edges; high or low centers
- Color is light golden brown
- Surface is slightly rough but soft
- Volume is lightweight in proportion to size
- Crust is thin and tender and may have smooth surface cracks

INSIDE CHARACTERISTICS 40%

- Even color throughout cut surface
- Uniform air cells
- Very Tender, breaks easily, but is not crumbly
- Has an even grain
- Is slightly moist, soft, and free from tunnels

FLAVOR 30%

- Pleasant and satisfying sweet taste
- Will have a delicate flavoring of the extract used
- No decided taste of salt, cream of tartar, or eggs should be present

From simple pound cakes to towering layer cakes, a complete guide to baking, plus ten classic cake recipes
By Nick Malgieri

There are many different types of cakes and many different ways of dividing them into various categories, but professional bakers categorize cakes by ingredients and mixing method. (Home bakers tend to categorize cakes by flavoring—i.e., chocolate cakes, fruit cakes, and so on—which is helpful when you're trying to decide what to eat, but not as helpful when you're trying to understand how best to make a cake.) Depending on how the batter is prepared, you will find that the final texture (and color, if it is a yellow or white cake) varies. Below is a comprehensive but by no means exhaustive list of the basic types of cakes:

The High-Ratio Method:

An alternate mixing technique for butter cakes, whether dense or light, is known as the **high-ratio method**: This involves mixing all the dry ingredients first, then beating in soft butter and finally adding the liquid in three separate additions, beating for a minute after each. You can use this method anytime the weight of the sugar in the batter is equal to or greater than the weight of the flour—the high ratio referred to in the name. Mixing this way guarantees a smooth batter that doesn't separate, thus making for a light and delicate baked cake.

Butter (or Oil) Cakes

These contain some kind of fat—often butter, but sometimes oil—and baking powder to leaven them or make them rise. If the fat is butter, the ingredients are usually combined using the **creaming method**, which means that the soft butter and sugar are beaten together in an electric mixer to partially dissolve the sugar and to incorporate some air. Then the dry and wet ingredients are added in alternating doses. This results in a light and airy crumb, though not quite as light as that of a sponge cake (see below). The best butter cakes have a moist buttery richness tempered by lightness. Included in this category are:

- **Pound Cakes:** This is the simplest type of butter cake. A classic pound cake is made with a pound each of butter, sugar, eggs, and flour. This produces a dense yet tender texture. Pound cakes are heavier than the types of butter cakes used for constructing layer cakes (see below). They're easy to prepare, with the only trick being that the butter must be quite soft when you begin. These cakes are usually very lightly flavored and served plain or topped with a simple glaze or water icing. A pound cake is usually baked in a loaf or Bundt pan. Many coffee cakes, sour cream cakes, and fruit crumb cakes are variations of pound cake.
- **Butter (and Oil) Layer Cakes:** Many different types of cake can be arranged in layers. However, classic American layer cakes are usually butter or oil cakes. The birthday cake you ate as a child was probably of this type. These cakes are lighter than traditional pound cake, but more moist and flavorful than European-style sponge layer cakes (see below). Cakes in this category include: **devil's food cake** (the classic chocolate layer

cake), **golden cakes** (made with egg yolks, which add richness and a golden color), and **white cakes** (made with egg whites, which create a lighter, whiter-colored cake).

Sponge and Foam Cakes

These are notable more for what they are missing than for what they contain: They usually do not include fat, such as butter or oil, and they do not incorporate leaveners, like baking powder. Instead, volume is created by **whipping the eggs** or egg whites. The air whipped into the eggs expands during baking, causing these cakes to rise on their own without baking powder. However, the success of this method depends on not deflating the eggs after whipping them. To this end, dry ingredients are usually sifted over and gently folded in, and fat is often avoided, as it would weigh down the foamy batter.

This method produces extremely light, airy cakes with a spongy texture but generally less flavor and moisture than butter and oil cakes. The basic types of sponge and foam cakes are:

- **Angel Food Cake:** This type is made with **egg whites alone and no yolks**. The whites are whipped with sugar until very firm before the flour is gently folded in, resulting in a snowy-white, airy, and delicate cake that marries beautifully with fruit. Most angel food cakes have a spongy, chewy quality derived from their relatively high sugar content and the absence of egg yolks. Baked in ungreased two-piece tube pans, angel food cakes are cooled by being inverted, since this type of cake would collapse if cooled right-side-up in the pan or if removed from the pan while still warm.
- **Genoise:** This type of sponge cake is made with **whole eggs** rather than just egg whites, which gives it a richer flavor than angel food cake. The eggs are combined with sugar and gently heated over simmering water, then whipped (heating the eggs allows them to be whipped to a greater volume). Genoise lacks much assertive flavor of its own, but it is often used to construct layered or rolled cakes when a lighter texture than a butter cake is desired. To add flavor and moisture, genoise cake layers are always moistened with a flavored syrup, and they are often sliced into thin horizontal layers and stacked with rich fillings such as buttercream. These layer cakes, common in the coffeehouses of Europe, are called "European-style" to distinguish them from American-style butter layer cakes, which generally have fewer, thicker layers.
- **Biscuit** (always pronounced the French way as *bees-kwee*): This type of sponge cake contains both egg whites and yolks, but, unlike in genoise, **the whites and yolks are whipped separately and then folded back together**. This creates a light batter that's drier than a genoise but holds its shape better after mixing. For this reason, it's often used for piped shapes such as ladyfingers. If baked in a tube pan like an angel food cake, it makes a very chewy sponge cake that was popular in the early 20th century but has since fallen out of favor. However, it's still known in a slightly different form as the classic Passover sponge cake, in which the flour is replaced by matzoh cake meal and potato starch.
- **Chiffon Cake:** This fairly recent American creation was invented by a salesman who sold the recipe to General Mills, which spread the recipe through marketing materials in the 1940s and 1950s. A classic chiffon cake is kind of a **cross between an oil cake and a sponge cake**. It includes baking powder and vegetable oil, but the eggs are separated and

the whites are beaten to soft peaks before being folded into the batter. This creates a cake with a tender crumb and rich flavor like an oil cake, but with a lighter texture that's more like a sponge cake. Chiffon cakes can be baked in tube pans like angel food cakes or layered with fillings and frostings.

Low- or No-Flour Cakes

Cakes made without flour (or with very little) generally have a creamy or silky texture. They can be baked or unbaked:

- **Baked Flourless Cakes:** These include **baked cheesecakes** and **flourless chocolate cakes**. For easy removal, they're often made in a springform pan, though some can also be made in regular round layer cake pans. Often the filled pan is placed in a larger pan that's half-filled with water to insulate the delicate, creamy cake from the oven's strong bottom heat, which might give the baked cake a porous rather than silky texture. This is called baking the cake in a **water bath**.
- **Unbaked Flourless Cakes:** These types of cakes are typically molded in a dessert ring or springform pan then simply chilled before unmolding. They include **unbaked cheesecakes** and **mousse cakes**. They often have a crust or bottom layer that's baked before the mousse is added. Sometimes other layers, such as genoise or biscuit, are alternated with the mousse.

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Butter or Shortened Cakes

Printer Friendly Page

Cake making is not difficult, but having an understanding of the role ingredients and technique play in the quality of your finished cake will help you to have consistent and excellent results every time.Butter cakes consist of taking the most basic of ingredients butter, sugar, eggs, flour, and a leavening agent (baking powder or baking soda) and transforming them into a baked good with a wonderful taste and texture.

There are three methods used in making butter cakes and the goal of each method is to incorporate the maximum amount of air into the batter (produces the volume and texture of the cake), to restrict the development of gluten in the flour (provides tenderness, texture and volume), and to have a uniform batter.

1) **Creaming Method**

2) **One Bowl, Quick or Blending Method**

3) **Combination Method**

Of the three methods, the creaming method is the most common and produces the lightest cake with the greatest volume. To start, the butter should be unsalted, of good quality, and at room temperature (65 - 70 degrees F) (18 - 21 degrees C). Butter that has a high butterfat content produces more air bubbles and tends to produce less curdling. The type of sugar used can vary by recipe from regular granulated white sugar to superfine (castor) white sugar.

To begin, place the butter and sugar in a mixing bowl and start beating these two ingredients on low speed. The creaming of the butter and sugar produces air bubbles in the fat created by the rubbing of the sugar crystals against the fat. These holes will get larger and multiply as you continue beating. Starting on low speed and then gradually increasing the speed allows the air bubbles to form and strengthen. Starting at too high a speed could damage or break the fragile air bubbles which will cause the finished cake to be heavy with a compact texture. The goal is to have maximum aeration, that is, lots of air bubbles in the fat. A well aerated batter means a cake with good volume and a soft crumb. Beating time can range anywhere from 5 to 10 minutes so be sure to follow your recipe.

Butter and sugar have different jobs in cake making. Butter provides flavor, tenderizes the batter and provides volume. Sugar, on the other hand, helps to tenderize the batter (slows down the gluten development in the flour) but also sweetens the batter, moistens the batter which helps keep the cake fresh, and helps with browning.

At the point where the butter and sugar mixture is light and fluffy, room temperature eggs are added. (The use of cold eggs will reduce the volume of your finished cake.) You may have noticed that there may be curdling of the batter at this stage. This is particularly so when the recipe is for a high-ratio cake (see below). This is caused by the addition of more liquid (eggs) than the batter can handle at one time. Once the flour has been added it will smooth out the batter so don't worry. One solution is to add the eggs to the batter more slowly as opposed to one egg at a time as most recipes state. Lightly beating each egg first and then slowly adding the egg down the side of the bowl as the mixer is running will help. If you see curdling, stop adding the egg and beat the batter a little to smooth it out before continuing the addition of more egg.

Eggs play a major role in cake making. Not only do they add needed aeration to the batter, they also provide structure to the cake, help to bind the ingredients together, keep the cake moist, add flavor, and tenderness.

Once the eggs have been combined and you have a smooth batter, flavorings, such as extracts are added. The flour is then sifted with a leavening agent (baking powder/baking soda) and salt. This is done not only to aerate the flour and remove any lumps, but to evenly distribute the leavening agent and salt throughout the flour. If the leavening agent is not evenly distributed throughout the cake batter, holes in the baked cake can occur. Baking powder's role is to enlarge the bubbles created in the fat during the creaming of the fat and sugar.

The flour mixture and room temperature liquid (milk, water, etc.) are added alternately, beginning and ending with the flour mixture to ensure a smooth and light batter. It is very important not to overmix the batter at this point. Over mixing will develop too much gluten in the flour and the result will be a tough cake. Mix only to incorporate the ingredients. The first addition of flour will be fully coated with the fat and does not form gluten, so it is a good idea to add the largest amount of flour in the first addition. When you add the liquid any uncoated flour will combine with the liquid and form gluten. Continue adding the flour and liquid alternately, making sure you mix on low speed just until blended. This will enable enough gluten to develop to provide structure but not enough to make a heavy and compact cake.

Liquids are used in butter cakes to dissolve the salt and sugar, to add color and richness, and to not only moisten and therefore activate the baking powder/baking soda in the batter, but to also create steam when the cake batter is placed in the oven so the cake will rise and reach its full volume.

The one bowl or quick method produces a cake which is very moist, dense, with a fine and velvety texture. As the name implies, this method is faster and easier than the creaming method as the creaming step of the butter and sugar is eliminated. All the dry ingredients are first put into a mixing bowl and then soft butter and a little liquid are added. This is thoroughly beaten together and then the eggs, flavoring, and remaining liquid are added. Since the liquid is added after the butter and flour are combined, it reduces the gluten formation in the flour because the fat has had a chance to coat all the flour before the toughening action from the liquid can take place. This is why this method produces a melt-in-your-mouth cake (less gluten is formed). However, using the one bowl method does not produce a cake with as much volume as the creaming method. This is because the butter tends to melt into the batter, so it doesn't form as many air bubbles needed for maximum volume as in the creaming method. The temperature of the ingredients plus the mixing speed are very important with this method so be sure to follow your recipe's instructions.

The combination method is when whipped egg whites are added to the creamed ingredients. This method gives additional volume and light texture to your cake. Some recipes that call for the creaming method can be changed to this method by simply separating the eggs, beating the whites separately with a little of the recipe's sugar, and then adding the whites to the finished batter.

With all three methods, once the batter is mixed it is then placed in greased and floured pan(s) (sometimes lined with parchment paper). The batter should fill approximately 1/2 to 2/3 of the cake pan(s) to allow room for the batter to expand. See the Pan Sizes page if you wish to change the size of the pans called for in your recipe. If you have a problem with over browning of the edges of your cake, you can place reusable Bake-Even Strips (available at most cake supply stores) around the outside of the cake pans. Make sure you take into account that dark and/or dull colored pans absorb more heat than aluminum and/or shiny pans and therefore the batter will bake faster. Lower the oven temperature by 25 degrees F if using a glass pan to prevent over browning. .

The oven temperature affects both the texture and look of the cake. How hot the oven temperature determines how long it takes for the batter to set. The longer it takes for the eggs, milk and flour to coagulate, the more time the air cells in the batter have to grow larger and produce volume in the cake. Too hot and the outer edges of the cake will set before the middle has a chance to fully bake. This is why it is important to have an accurate oven temperature. Having a free standing oven thermometer in your oven will give you a proper reading on temperature as some ovens are not calibrated properly.

The oven should always be preheated about 15 minutes before placing the pans in the oven. If baking more than one layer at a time, arrange the cake pans so they are about 2 inches (5 cm) apart and 2 inches (5 cm) from the sides of the oven. This ensures adequate air circulation and promotes even baking. Do not open the oven door, especially during the first 15 minutes of baking, as the oven temperature drops about 25 degrees F every time the oven door is opened.

Butter cakes are done when a toothpick inserted in the center of the cake comes out clean. Remove the baked cake from the oven and cool on a wire rack for about 10 minutes before releasing.

There are formulas for butter cakes that professionals follow and deviations from these formulas of about 20% can be supported. This is why you have so many different recipes for one type of cake. Some alterations in using eggs can be made. Egg whites and yolks play different roles in cake making and changes in the balance of whites and yolks will affect the baked cake. For example, in layer cakes you can replace one whole egg with either 2 egg yolks or else 1 1/2 egg whites to change the texture. Using yolks will produce a more flavorful cake with a darker color, but a cake with less structure. Using whites will produce a softer cake because egg whites do not firm up as much as egg yolks when baked. Types of fats (butter, margarine, shortening), sugars (regular, superfine or brown) and flours (all-purpose or cake) used also affect the cake.

If you have a recipe that is not working compare it to these formulas to see if there may be a problem with the proportions of the ingredients in the recipe. These formulas are from Shirley O. Corriher's CookWise. This is an excellent book that not only has great recipes but also explains the science of cooking and baking. For additional help check the Troubleshooting Butter Cakes page.

Formula for regular butter cake:

- Weight of sugar is equal or less than weight of flour

- Weight of eggs is equal or greater than weight of fat

- Weight of liquids (egg and milk) is equal to weight of flour

Formula for high ratio butter cake:

- Weight of sugar is equal or greater than weight of flour

- Weight of eggs is greater than weight of fat

- Weight of liquid (egg and milk) is equal or greater than weight of sugar

Leavening: (This is a general guideline as the other ingredients used in a recipe also affect the amount of baking powder/baking soda used.)

1 - 1 1/4 teaspoons of baking powder for each cup of flour OR

1/4 teaspoon baking soda for each cup of flour

DIFFERENCES BETWEEN TYPES OF FLOUR:

Pin it **If you make bread every weekend or have an obsession with cakes, it makes sense to keep specific flours for those recipes on-hand. But what about the rest of us? Is there such a big difference between these flours or can all-purpose flour really be used for *all* purposes?!**

First, what's actually the *same* about all these flours is that they are made from wheat. What makes them different is how they're milled, what kind of wheat they're made from, and even what time of year the wheat was harvested. But what it really all boils down to is protein content.

Protein content is directly related to how much gluten can be formed using that particular flour. Gluten helps create structure and determine texture in your final baked good. Flours with low protein contents will generate less gluten and flours with high protein content will create more.

To get the light and airy structure of cakes, you want a flour with very little protein. But to form the dense chewy structure of bread, you want a flour with a lot of protein so that you can create as much gluten as possible.

Here is the approximate protein content of all the common types of flour:

Bread Flour: 14 - 16%
All-Purpose (AP) Flour: 10 - 12%
Pastry Flour: 9%
Cake Flour: 7-8%

The exact protein content varies by brand, by region, and also by country. However, the name given to the flour is usually an indication of how it's intended to be used. If you're having trouble with a recipe written by someone in another country, try to figure out the protein content of the flour they're using and then find your local equivalent.

Substituting flours with different protein contents can get a little tricky. For most intents and purposes, you're safe using pastry and cake flour interchangeably. You can also generally use AP flour for either pastry or bread flour.

If all you have is AP flour, you can approximate cake and pastry flour by adding 2 tablespoons of corn starch to a scant cup of AP flour. Likewise, you can bump up a flour's protein content (and it's gluten potential) by adding a few tablespoons of vital wheat gluten.