Introduction to Baking and Pastries

Chef Tammy Rink

With

William R. Thibodeaux PH.D.

Introduction to Baking and Pastries

Chef Tammy Rink

With

William R. Thibodeaux PH.D.

Contents

Limit of Liability/disclaimer of warranty and Safety: The user is expressly advised to consider and use all safety precautions described in this book or that might be indicated by undertaking the activities described in this book. Common sense must also be used to avoid all potential hazards and, in particular, to take relevant safety precautions concerning likely or known hazards involving food preparation, or in the use of the procedures described in this book. In addition, while many rules and safety precautions have been noted throughout the book, users should always have adult supervision and assistance when working in a kitchen or lab.

Any use of or reliance upon this book is at the user's own risk. While the information contained in this book has been compiled from sources believed to be reliable and correct at the time of original publication, neither the publisher nor the author makes any warranty, express or implied, with respect to the use of any techniques, suggestions, and ideas disclosed in this book.

The publisher and author disclaim any and all liability for any damages of any kind or character, including without limitation: any compensatory, incidental, direct or indirect, special, punitive, or consequential damages, loss of income or profit, loss of or damage to property or person, claims of third parties, or other losses of any kind or character arising out of or in connection with the use of this book or the accuracy of the information contained herein, even if the publisher or author has been advised of the possibility of such damages or losses.

Information in this book, including URL and other Internet Website references, is subject to change without notice.

Preface

Baking

The first evidence of baking occurred when humans took wild grass grains, soaked them in water, and mixed everything together, mashing it into a kind of broth-like paste. The paste was cooked by pouring it onto a flat, hot rock, resulting in a bread-like substance. Later, when humans mastered fire, the paste was roasted on hot embers, which made bread making easier, as it could now be made any time fire was created.

The world's oldest oven was discovered in Croatia in 2014 dating back 6500 years ago. The Ancient Egyptians baked bread using yeast, which they had previously been using to brew beer. Bread baking began in Ancient Greece around 600 BC, leading to the invention of enclosed ovens. "Ovens and worktables have been discovered in archaeological digs from Turkey (Hacilar) to Palestine (Jericho) and date back to 5600 BC."

Baking flourished during the Roman Empire. Beginning around 300 B.C., the pastry cook became an occupation for Romans (known as the pastillarium) and became a respected profession because pastries were considered decadent, and Romans loved festivity and celebration. Thus, pastries were often cooked especially for large banquets, and any pastry cook who could invent new types of tasty treats was highly prized. Around 1 AD, there were more than three hundred pastry chefs in Rome, and Cato wrote about how they created all sorts of diverse foods and flourished professionally and socially because of their creations. Cato speaks of an enormous number of breads including; libum (sacrificial cakes made with flour), placenta (groats and cress), spira (modern day flour pretzels), scibilata (tortes), savaillum (sweet cake), and globus apherica (fritters). A great selection of these, with many different variations, different ingredients, and varied patterns, were often found at banquets and dining halls. The Romans baked bread in an oven with its own chimney, and had mills to grind grain into flour. A bakers' guild was established in 168 B.C. in Rome.

Pastry

The European tradition of pastry making is often traced back to the ‘short crust’ era of flaky doughs that were in use throughout the Mediterranean in ancient times. In the ancient Mediterranean, the Romans, Greeks and Phoenicians all had filo-style pastries in their culinary traditions. There is also strong evidence that Egyptians produced pastry-like confections that were made by dipping a baked flour cake in honey and serving with desert nuts as toppings. They had professional bakers that surely had the skills to do so, and they also had needed materials like flour, oil, and honey. In the plays of Aristophanes, written in the 5th century BC, there is mention of sweetmeats, including small pastries filled with fruit. Roman cuisine used

flour, oil and water to make pastries that were used to cover meats and fowls during baking in order to keep in the juices, but the pastry was not meant to be eaten. A pastry that was meant to be eaten was a richer pastry that was made into small pastries containing eggs or little birds and that were often served at banquets. Greeks and Romans both struggled in making a good pastry because they used oil in the cooking process, and oil causes the pastry to lose its stiffness.

In the medieval cuisine of Northern Europe, pastry chefs were able to produce nice, stiff pastries because they cooked with shortening and butter. Some incomplete lists of ingredients have been found in medieval cookbooks, but no full, detailed versions. There were stiff, empty pastries called coffins or 'huff paste' that were eaten by servants only and included an egg yolk glaze to help make them more enjoyable to consume. Medieval pastries also included small tarts to add richness.

It was not until about the mid-16th century that actual pastry recipes began appearing. These recipes were adopted and adapted over time in various European countries, resulting in the myriad pastry traditions known to the region, from Portuguese "pastéis de nata" in the west to Russian "pirozhki" in the east. The use of chocolate in pastry-making in the west, so commonplace today, arose only after Spanish and Portuguese traders brought chocolate to Europe from the New World starting in the 16th century. Many culinary historians consider French pastry chef Antonin Carême (1784–1833) to have been the first great master of pastry making in modern times.

Pastry making has a strong tradition in many parts of Asia. Chinese pastry is made from rice, or different types of flour, with fruit, sweet bean paste or sesame-based fillings. The mooncakes are part of Chinese Mid-Autumn Festival traditions, while cha siu bao, steamed or baked pork buns, are a regular savory dim sum menu item. In the 19th century, the British brought western-style pastry to the Far East, though it would be the French-influenced Maxim in the 1950s that made western pastry popular in Chinese-speaking regions starting with Hong Kong. The term "western cake" is used to refer to western pastry, otherwise Chinese pastry is assumed. Other Asian countries such as Korea prepare traditional pastry-confections such as tteok, hangwa, and yaksik with flour, rice, fruits, and regional specific ingredients to make unique desserts. Japan also has specialized pastry-confections better known as mochi and manjū. Pastry-confections that originate in Asia are clearly distinct from those that originate in the west, which are generally much sweeter.

Topic 1: Baking and Pastry Equipment

The kitchen is filled with the tools that help a Pastry Chef create wonderful creations. The key is in the mastering of these tools to perform that task they are meant for. As with anything, practice is the key to becoming proficient in any task and in the kitchen, the mastering of the tools is essential. Each tool is designed to perform a task. In order to master task the Pastry Chef need to understand the equipment and what each piece is used for. A keen understanding of the workings of the equipment is also important for the finished product to be its best.

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Stand Mixers

Commercial mixers are a big part of the commercial kitchen. They aid in making the mixing of ingredients easier and faster. While small batches of certain doughs can be mixed by hand there are many times when it is more beneficial in the interest of time to use

Tabletop mixers: In the kitchen, the tabletop mixers are used for small soft batches of dough. This one can be easily moved. The attachments for this mixer include a dough hook, balloon whip, and paddle.

The mixer has three speeds. The "1" is the slowest and what is used to begin the mixing process. Once the ingredients combine then the mix can be moved to "2" medium and then to "3" high.

The front of the mixer has a small metal disk and black pin. This would allow for the use of other attachments.

Table Top Mixer

This mixer is larger than the stand mixer. The mixers vary in size depending on the kitchen / bakeshop that they are being used in most professional kitchens will have the 20 quart tabletop mixer seen the picture. The tabletop mixers sizes range from five to 20 quarts. The size is determined by the amount of product the bowl of the mixer can hold. The front is also allows for attachments that will allow for meat grinding and pasta cutting.

Both stand and tabletop mixers come with 3 different attachments.

Balloon Whip (a1)

The balloon whip is used to whisk air into ingredients. The whip is used for soft ingredients like heavy cream, meringues, and mousses.

Paddle (a2)

The paddle attachment is used to cream ingredients together or alone. Ingredients that are too hard for the whip to break down such as butter and cream cheese. It is also used for many batters that begin with the creaming method.

Dough Hook (a3)

This is used to mix doughs.

a1

a2

a3

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Dough Cutters

Dough cutters are used to quickly and efficiently cut large amounts of dough into the required size. The dough cutter pictured is the **Dutchess cutter**. This cutter has the cutter surface that will cut 36 equal portions at once.

The dough is placed in the metal holding tray. The tray is returned to the Dutchess with the metal handle pointing outwards. The long handle is then pulled toward the front of the press. This allows for the dough to be tamped down and to assure that the dough covers the entire cutting surface. With the handle pressed down, the cut lever is released and the cutters are exposed to cut the dough. The handle is then raised, and the dough is left in 36 pieces. This tabletop version does not have a rounder. The dough for cutting will be made up according to specifications of the pastry chef.

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Table 1 - Scaling Bread Dough for the Dutchess

Size needed	Amount of Dough	Used for
1.2 oz. each (35 to 40 grams)	1.2 x 36 = 43.2 /16 = 2.7 lbs.	Bistro Dinner Rolls
.98 oz. each (28 grams)	.98x36=35.28 /16 = 2.20 lbs.	Russian Service Rolls

Dough Sheeter

Sheeters come in various sizes like other equipment. The type that is in your shop will depend on the space you have and what it is needed for. There are tabletop sheeters and standalone sheeters. The sheeter is used to quickly and uniformly, roll out dough to a desired thickness. The operator runs the sheet by decreasing the space between the rollers as the dough passes through them. The tabletop is done by feeding the dough through the rollers by hand.

Proofer

The **proof box** or **proofing cabinet** keeps a controlled heat and humidity that allows yeast doughs to finish its final rise before the baking process. The box operates by adding water to the well at the bottom that has a heating element in it.

Control settings allow the user to change the temperature and humidity for different types of bread dough.

Courtesy of Chef Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Deck Oven

Courtesy of Chef Tammy Rink

The four deck ovens are stacked into a single piece of equipment. They used conduction heat to bake products. The heat travels to the stone bottom of the oven (the baking surface) and then to the bread placed directly on the stone or the pan. The secondary heat source is radiant heat that penetrates the dough to assist in baking the bread. Deck ovens are necessary have for the artisan bread baker. They allow for the beautiful, crust bread loaves.

Deck ovens also have the option to inject steam, which aids in the formation of the crust. Each deck can be set at different temperatures, which allows for many different types of baked goods to be cooked at once.

Convection Oven

The stacked convection ovens are a great and versatile oven. What makes this oven a fantastic addition to a commercial kitchen is the range of heat that the oven can produce. The oven heats by fan forced heat, which gives an even heating source.

From drying out meringues to baking of breads the convection oven is the perfect oven for the task. This oven also allows for the addition of steam, which is important to give, rolls a shiny finish and the full rise of the bread dough.

Courtesy of Chef Tammy Rink

Fryer

The double basket fryer is a gas heated fryer. Each fryer section allows for independent frying. The oil in each section is kept separated by a divider and thus allows for different foods to be fried without contamination of the oil.

Courtesy of Tammy Rink

Stove

The 6-burner gas stovetop allows commercial style cooking with a high BTU output. The range also has a storage cabinet. The locking wheels aid in keeping it in place while also allowing it to be moved for cleaning purposes. There is also a catch tray for any spills or overflows.

Courtesy of Chef Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Ice Cream Machine

The Taylor ice cream machine is designed to turn your base into either soft serve ice cream or sorbet. The commercial machine adds just the right amount of overrun (air) to the mix to give you a smooth, creamy dessert.

The timer is set to the amount of spin time. The auto button is turned on that the machine automatically counts down the minutes of spin time. The blade inside the machine spins incorporating the air into the mix as well as scraping the barrel to assure an even smooth mix.

When the timer is done, the buzzer will go off. If the mix is at the desired texture, the extrude button is pressed and the machine will be expelled through the hopper (white knob).

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Hand Held Kitchen Equipment

Spatulas

Rubber spatulas are heat resistant. This means that they will not transfer heat or get hot when using while cooking. They will melt if left over a fire. They come in different sizes. Pictured are the small and large rubber spatulas.

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Cake Spatulas (palette knife) these are metal spatulas that are used for cake decorating. They range in size from small to large. The size of the blade will determine which one you use. Each has a different feel in your hand.

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Offset metal spatulas are used in cake decorating. The blade of the spatula is uneven which allows the user to spread batter in pans easily. Just like the cake spatula, they come in different sizes.

Courtesy of Chef Tammy Rink

Miscellaneous Kitchen Tools

Bench Scraper

These are used to clean off the bench. The metal blade is hard and allows scraping dough that is stuck to the bench easily without cutting grooves into the wooden bench top. They are also used to cut dough evenly and quickly.

Courtesy of Tammy Rink

Pastry Brush

The pastry brush has a variety of uses. For cake decorating a dry brush is used to remove crumbs from the turntable and cake. It can also be used to add cake syrup to cake layers. When adding egg wash to doughs the brush allows for even application.

Courtesy of Tammy Rink

Cake Comb

This tool is used in decorating cakes. There are many different decorative types. They are used to add dimension to the sides of cakes by applying pressure to the comb as you turn the cake. The design left depends on the decorator and the comb used.

Courtesy of Chef Tammy Rink

Measuring Spoons

The measuring spoons are nested in a set. The set consist of 1 Tablespoon, 1 Teaspoon. ½ Teaspoon, ⅓ Teaspoon and ¼ Teaspoon. When measuring dry ingredients: scoop the spoon into the ingredients, using a straight edge scrape the top of the of the spoon to get an even amount.

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Measuring Cups

The nested measuring cups are used for measuring dry ingredients. The amounts of each cup is printed on the inside bottom. The measurements are 1 cup, ½ cup, ⅓ cup and ¼ cup.

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Metal Spoons

They come in **slotted** and **un-slotted** spoons. They are used in cooking dishes. They are excellent conductors of heat. If left in a pot over heat they will become very hot and will burn someone. Slotted will allow the liquid to drain through.

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Tongs

These are used to handle hot food or ready to eat food.

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Ladles

These come in various sizes. They are measured by ounces. When tempering hot liquids these are used

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Peelers

Used to peel fruits and vegetables. The blade on this is very sharp. Most peelers have a pointed end to remove blemishes on fruit and vegetables.

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Micropane

Small hand held graters used to zest fruits and shred hard cheese and other ingredients. The zest from fruits are in tiny pieces rather than long slivers.

Courtesy of Chef Tammy Rink

Thermometer

Thermometers are used to find the correct temperature of items. When cooking, they can find the internal temperature of meat, and bread – useful information. The thermometer pictured is an infrared thermometer. These find the surface temperature of items. They are good when tempering chocolate. Types: pocket, candy, infrared. They come in both digital and dial.

Courtesy of Tammy Rink
Chef Instructor Chef John Folse Culinary Institute

Topic 2: Dry Ingredients

Wheat Flour

One of the most important ingredients in the baking process is flour. Almost every item made has some type of flour added. It is the main building block of breads, pastries and most cakes. The production of flour can be traced through the centuries to the beginning of civilization. An important fact for a baker to know is the difference between hard and soft wheat. This gives the baker the ability to know which type of flour to use for the application needed.

There are six different types of wheat grown in North America.

1. **Hard Red Winter** - This versatile wheat can be used in a variety of baking applications as well as making Asian style noodles. The protein content of this milled wheat is between 10 to 15 %. This is a good choice for all purpose flour, hard rolls and flatbreads.

2. **Hard Red Spring** - this wheat has a higher protein content 12 to 18 % and is primarily used to mix into flours. As a standalone flour, it the gluten formed is very strong and often difficult to form into bread. It is often added to improve bread flours and is used in making the high-end breads such as: artisan breads, pizza crust, croissants and rolls.

3. **Soft Red White** - this flour has a weaker gluten formation due to a low protein content of only 8 to 11%. The weaker gluten makes this an excellent wheat for items such as cookies, crackers and pastries.

4. **Soft White** - this a wheat has a low moisture content as well as low protein content 8 to 11 %. It also produces a whiter product, which makes it ideal for cakes, pastries, and some Middle Eastern flatbreads.

5. **Hard White** - this is a newer type of wheat grown in the United States. It is used for making whiter wheat breads as well as Asian noodles, and flatbreads.

6. **Durum** - this is the hardest of all wheats. It has the highest protein content 14 to 16 % as well as the high gluten content. It is primarily used in the production of pastas, couscous and Mediterranean breads.

The Wheat Kernel

The wheat kernel is made up of three parts: **bran**, **endosperm,** and **germ**. During the milling process, the kernel is broken up and each part is milled and used.

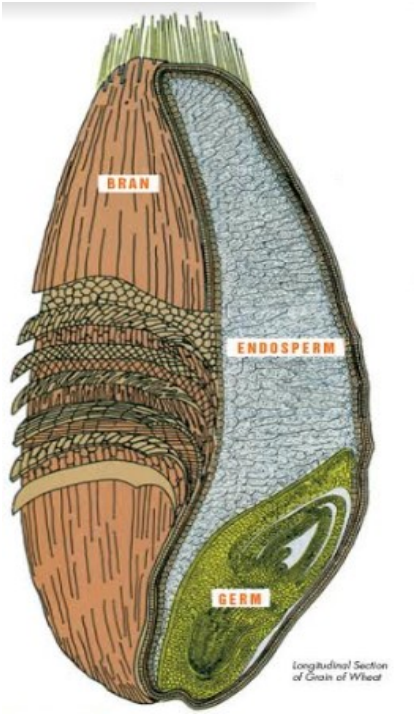


Image Wheat Foods Council

1. **Bran** - this is the hard outer casing of the kernel. It is darker in color than the inside. When looking at flour the brown specks present is the milled bran. It is removed from white flour. The bran is high in fiber, vitamins, minerals, proteins and fat.

2. **Germ** - this is from where new wheat plants sprout. It has a very high fat content thus is will become rancid quickly. This leads to a very short shelf life of any flour that contains the germ.

3. **Endosperm** - this is the inside part of the kernel. It makes up about 83% of the kernel. This is the part that white flour is derived. It is also the starchiest part of the kernel with about 68 to 76% starch. It contains protein and carbohydrates alone with vitamin B, iron, minerals and soluble fiber.

Milling Process

The purpose for milling to separate the parts of the wheat kernel into usable material. Thus, the endosperm has to be separated from the bran and germ. The endosperm is the part that becomes flour that we use in baking. All parts can be purchased for use in today's market.

In the early years of milling, the wheat kernels were milled by smashing or rolling them between two large stones. This process gave a course grind to the stone but allowed the parts to be sifted and separated. This was a very laborious process. You can still find stone ground products today in some European markets but

most flours in the US are no longer process this way. The most common stone ground products are stone ground grits and cornmeal.

Modern milling of wheat occurs by way of the ***break system***.

Types of Flour used in Bakery

Bread Flour - this is a strong flour made from hard wheat. It offers a good amount of protein and thus offers a good gluten formation. You can purchase this bleached or unbleached. This type is usually reserved for commercial bakeries.

High-Gluten – We use this flour in class. It is a high protein flour that offers a good gluten formation also.

Cake Flour – this is weak flour made from soft wheat. It is normally pure white. It has a soft and silky feel to it. The gluten formation is low with this flour, which makes it an excellent flour for delicate pastries.

Pastry Flour - a weak flour that is also low in protein and thus low in gluten formation. It is stronger than cake flour however. The color is a creamy yellowish color.

All-purpose – this flour is a general use flour. It can be used in the place of each of the above flour. Its protein content is lower but has enough form a good gluten structure for bread making. Usually this is the home baker's flour of choice.

Self-rising - this flour has the leavener added to it. Baking powder and salt. This is not used in the professional kitchen. Leavener tend to weaken over time so this can be an issue also when scaling recipes most have a leavener added and the amounts vary so not enough could ruin the product.

Meals

Corn meal – this is made from the endosperm of the corn kernel. It can be purchased in a variety of styles. It contains no gluten.

Nut meals - various nuts are ground into "flours" that can be used in baking. Almond and Hazelnut are the two most common. These also contain no gluten due to the absent of wheat in the product.

Sweeteners

Sugar - refined graduated sugar is a common item in the bake shop. It is used in almost every recipe as the main sweeter ingredient. It can also act as a tenderizer in products. This has no molasses left in it after refining.

Sugar is *hydroscopic* which means it absorbs moisture in the air and its surrounding.

Light brown sugar - this is sugar that has not been refined as much. It still has some molasses left in it. This gives it a slight addition of acidity. It will feel a bit wet when touched. When measuring this sugar you want to make sure you pack in into the measuring cup tight. If done correctly it will hold its shape when removed.

Dark Brown Sugar - this is sugar that has the highest amount of molasses left in it during the refining process. This has a slightly higher acid content than light brown sugar.

Molasses - a byproduct from the process of refining sugar. It is a thick darn brown liquid. It added moisture to baked goods helping then stay fresher longer.

Honey - a natural sugar syrup made by bees. The type of honey varies depending on the diet of the bees and the area in which they are kept. It is the only food that does not spoil. It may crystalize as it sits but it can be put into warm water, or heated to melt the crystals.

Invert Sugars

These are liquid sugars that are used in the baking kitchen. They can be added to recipes as sweeteners, or used to prevent crystallization of the granulated sugar. Corn syrup and glucose are two of the most common we use.

Fats

Butter - is made from the processing of heavy cream. As the cream is agitated, the fat molecules pull together and separates from the whey. It can be purchased in stores salted and unsalted. In the kitchen, unsalted butter is preferred so that salt can be measure into the recipes in the correct amounts. Butter will become solid when cold but soft at room temperature. It also has a very low melting point (90 to 95^{o}F).

Margarine - This is a fabricated product from hydrogenated animal and vegetable fats. It also contains flavorings, emulsifiers and dyes to give it color. There are different types that can be purchase. It is cheaper than butter while still maintaining some flavor of butter.

Shortening

Regular – this is the shortening are referred to as plastic shortenings. They have a tough waxy texture with small fat particles. They have a good creaming ability and work well in flaky pie doughs because of their texture. Crisco is an example.

High-ratio - they spread easily through a batter. They are creations for use in recipes that have a high ratio of liquid and sugar to flour.

High-ration liquid - they have less hydrogenation which makes them pourable. This add moisture to cakes and batters. It also allows for easy air incorporation, which will give cakes a better rise and texture.

Dairy

Milk - this can be purchased in whole, 2 %, low fat, and skim. Each of these describes the amount of fat this is in the product. Milk today is sold as homogenized which means it has been through a process that keeps the fat and liquid from separating.

Heavy Cream - this has a higher percentage of fat in it. It can be used as is or whipped up and sweetened to make whipped cream. As with milk you can buy heavy cream with different fat percentages.

Butter Milk – this is used often in recipes but contains an acid that is countered by the addition of Baking soda.

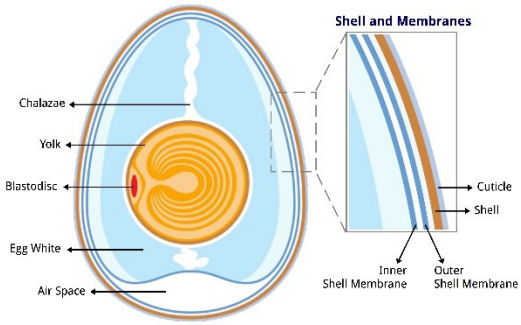
Evaporated Milk - also known as "pet "milk. Evaporated milk is milk that has a percentage of the water removed. It is sold in cans unrefrigerated due to sterilization.

Fat Amounts in Various Dairy Products	
Whole Milk	8 %
Skim Milk	< 1 %
Heavy Cream	30 % to 40 %
Half and Half	10 % to 18 %

Eggs

The egg is an essential ingredient used in the bake shop.

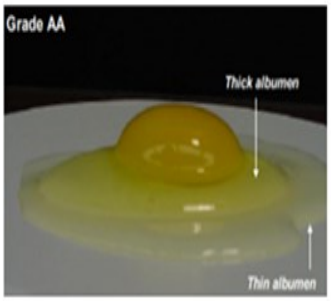
The make of the egg is simple – yolk, white and shell. In the diagram you see how each in connected in the shell.
The chalazae is the stringy white part you see when you crack the egg.
The yolk is high in fat and protein. Lecithin is also found in the yolk and aid in thickening and emulsification of ingredients.
The white is the lean part of the egg. It is used for meringues and coagulates when heated.

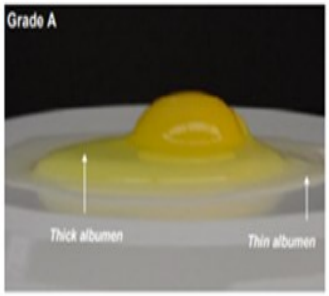


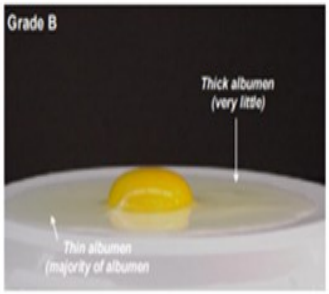
Grading and Weight of Eggs

The United States grading system for eggs is based on their quality but also size. There are 3 types of grades given to eggs AA, A and B.

Approximate of Weights of a Large Egg	
One whole egg	1.67 oz.
One egg white	1 oz.
One egg yolk	.67 oz.
9 ½ whole eggs	1 lb.
16 egg whites	1 lb.
24 yolks	1 lb.







Yeast

The leavening agent in yeast doughs. It is a single cell fungi however there are many species and well as types. When fed the yeast will produce carbon dioxide and alcohol.

Types of Yeast

1. **Fresh or Cake** - this is sold in bricks similar to butter. It is moist and perishable. If treated properly it will last about 2 week in the refrigerator. It can be froze to extend the life if not used right away.
2. **Active Dry** - this must be rehydrated with warm water that is 4 times its weight. Yeast will die if the water temperature is 140°F or higher. Major issue with this yeast is that many of the yeast cells in the packet are dead and activing the rest can be problematic.
3. **Instant dry yeast** - this yeast does not need to be dissolved in water to use it. It can be added to the dry ingredients and mixed due to its ability to absorb water quickly. This makes it the preferred yeast product of most bakers today.

Chemical Leaveners

These leaveners work by releasing gases caused by a chemical reaction.

Types of Chemical leaveners

1. **Baking Soda** – sodium bicarbonate. The reaction for baking soda is done once liquid is added. Products that contain baking soda must be baked as soon as they are assembled. If allowed to sit the chemical reaction will take place and end causing the product to not rise once in the oven. They are generally used when acids are added to a recipe such as molasses, brown sugar, and some fruit juices and cocoa powder.

2. **Baking Powder** – this is a combination of baking soda and an acid. This allows for the majority of the leavening to take place in the oven. Heat is need to leaving products that contain baking powder. The preferred type found in stores and bakeries is double acting baking powder.

Cocoa Powder

This is the powder that is left once the cocoa butter has been removed during the production of chocolate.

Types of Cocoa Powder

1. **Dutch-processed**- the acid in this has been neutralized through a washing process. This gives the cocoa powder with a dark color, and smoother flavor.

2. **Cocoa powder** – this is somewhat acidic and lighter in color.

Vanilla

This is the fruit of the orchid plant Vanilla. The fruit is cut, and cured which dries the pod allowing for the intense flavor due to minimal loss of the essential oils.

- Vanilla extract is made from soaking the cut vanilla beans in alcohol. It is allow to macerate until the desired flavor profile is reached. The beans are then removed and the product is bottle.

- Once you use a bean, it can be dried and used to make vanilla sugar. This is done by enclosing the bean and sugar in a container and allowing the sit. The vanilla flavor is permeate through the sugar.

- Dried Vanilla beans can also be ground and made into vanilla powder.

Topic 3: Quick Breads

These breads are an ideal solution to the bakers who love bread but do not have the time or resources to spend on yeast breads. These breads are relatively quick to makes as their name suggest. They are leaved with chemical leaveners that make them ready to bake in a short amount of time. These breads are usually tender with very little mixing time, which allows very little gluten formation. The mixing methods used for quick breads are usually just a few minutes and easy to do by hand.

Types of Doughs for Quick Breads:

1. **Liquid or pourable batters** – these are more fluid and not as thick. They can be poured into prepared pans. Drop batters are also part of this category they are not liquid but soft enough to be dropped with a spoon.
2. **Soft doughs** - this dough is soft and can be rolled out and cut into shapes. Biscuit dough is worked gently by hand and must be stiffer than what is need for muffins.

Mixing Methods of Quick Breads

Muffins Method

This method is used for batters that are low in fat and sugar. They tend to be a little drier because of this. These batters have a tendency to be over mixed thus making the product tough. In this method, the dry ingredients should only be mixed until moistened. Over mixing to the point where the batter is smooth will lend to a dry and tough finished product. The finished batter should have visible lumps in it that will disperse in the cooking process.

Creaming Method

This is used for batters that are higher in fat and sugar because it gives a more complete mix of the ingredients. This will give the finished product a more cake like texture. This is usually a cake mixing method but can be used to make some quick breads.

Biscuits Method

This is used to make biscuits, scones and other similar quick bread products. When making biscuits some kneading is required but over working the dough will cause it to become hard. The small amount of kneading lends to a flakier texture of the finished biscuit. The dough is soft and can be rolled out and cut into shapes depending the shape and size you want. If there is some kneading

the biscuit will rise more. Dough that has not been knead will tends to spread more and the texture if more cake like.

Mixing Methods Procedures

Muffin Method

1. Add your dry ingredients to a bowl and then sift on parchment paper. Add this back to the mixing bowl and then set it aside.
2. In a bowl, add your liquid ingredients. You will also add any fat such as oil or melted butter.
3. The liquid ingredients are then added to the dry ingredients.
4. You will mix this until the dry ingredients are all moistened. Your batter should still have lumps in it. Be careful to not overmix the batter. If your batter is smooth and lump free it is overmixed.
5. Once the batter is mixed, pan it up and bake. Do no let the batter sit.

Creaming Method for Muffins

1. The sugar and fat are added to the bowl of a mixer. If spices are added, they will be added at this time also.
2. Using the paddle attachment, you will begin to cream the ingredients until they are light, white and fluffy.
3. Next, you will add the eggs in stages. Scraping down the sides and bottom of the bowl after each addition. This ensure even mixing of the ingredients.
4. Sift the dry ingredients onto parchment paper.
5. Mix the liquid ingredients until they are combined.
6. The dry and liquid ingredients are then added in an alternating pattern starting with ¼ of the dry. Remember to scrape the bowl between additions.
7. Once the mixture is combined, next add 1/3 of the liquid ingredients. Keep this up until all the ingredients have been added.
8. Once the mixture is smooth and all ingredients have been added, pan up and bake.

Biscuit Method

1. Scale out all of your ingredients.
2. In a mixing bowl, sift dry ingredients together.
3. Add the butter and using the paddle attachment (with mixer) or pastry blender or by hand until the mixture has pea size bits of butter in it. This adds to a flakier biscuit.
4. The liquid ingredients are then added and combined to form a soft dough. Be careful to not over mix it.
5. Turn the dough out on the bench and lightly knead the dough. Using the heel of your hand push into the dough and with your fingers fold it and turn it counter clockwise 90 degrees. Continue this for 3 to 4 more folds.

6. Pin the dough out to about 1-inch thickness. Cut the biscuits to your desired shape.

Creaming Method for Biscuits

1. The sugar and fat are added to the bowl of a mixer. If your recipe calls for milk powder, it would also be added at this time.
2. Using the paddle attachment, you will begin to cream the ingredients until they are just combined. Extra mixing will change the texture of the biscuits.
3. Next, you will add the eggs in stages. Scraping down the sides and bottom of the bowl after each addition. This ensure even mixing of the ingredients.
4. Sift the dry ingredients onto parchment paper.
5. Mix the liquid ingredients until they are combined.
6. The dry and liquid ingredients are then added in an alternating pattern starting with ¼ of the dry. Remember to scrape the bowl between additions.
7. Once the mixture is combined, next add 1/3 of the liquid ingredients. Keep this up until all the ingredients have been added.
8. Once the mixture is smooth and all ingredients have been added, then turn out onto a floured surface and roll out.

Tips for success with Biscuit making

1. Do not over handle the dough. Knead just enough to make them flaky. Over working makes for a tough biscuit.
2. When cutting press down with the cutter. Do not twist. Cut as close to the last cut to avoid excess scraps. Having to rework the dough will make the dough tough.
3. Placing the cut biscuits upside down allows for a better rise.
4. If you want a crust around the entire biscuit place then on a parchment lined sheet pan about ½ to 1 inch apart.
5. If you want soft sided biscuit then put the cut biscuits touching each other.

Topic 4: Yeast Doughs

Bread is the one of the simplest and yet most complicated of items to make. Most doughs consist of flour, water, salt and yeast. The art of making simple and complex doughs is understanding the nature of the item and what affects the finished product – gluten development and the fermentation of the leavener, yeast.

Types of Doughs

Lean Doughs

These doughs are low in fat and sugars.

1. **Hard and crusty breads –** these are crust French breads, rolls, pizza doughs and hard rolls. These are the leanest of all doughs made.

2. **White and Whole wheat breads** – these breads may contain some fats and sugar. They are softer doughs and usually have soft texture and crust.

3. **Grain breads** - these types of bread are made from other types of flours and grains. They may contain additives that add acid and sweetness to the doughs i.e. rye, oat, flax seed and sprouted grains.

Rich Doughs

These doughs contain great amounts of fats and sugars, and also eggs. These additions give the breads a softer feel and richer taste. These types of doughs can be sweet or non-sweet depending on the amount of sugar that is added or toppings. Such breads include brioche, coffee cake, and dinner rolls.

Laminated Doughs

These types of doughs have the fat rolled into the dough to create layers. This is done by rolling or pinning in the fat and folding the dough to create the many layers that make up the doughs. This process gives the doughs a flaky and buttery texture. Although there is some sugar in the doughs, the majority of the sweetness comes from the added fillings and toppings. The two main types are croissants and Danish however, some other breads can be finished in this style.

The production of bread

As in everything, there are specific steps to making breads. It is much more complex than just adding the ingredients to a bowl and stir. The process is a building block of steps that cannot be rushed - or done out of order. Each step is necessary to insure that the bread comes out as desired.

The 12 Steps of Yeast Doughs

1. Scaling Ingredients
2. Mixing
3. Bulk Fermentation
4. Folding
5. Dividing (scaling or portioning doughs)
6. Preshaping or rounding
7. Bench-proofing
8. Makeup and Panning
9. Proofing
10. baking
11. Cooling
12. Storing

Scaling Ingredients

The recipes or formulas used in baking are exact and getting the amount of each ingredient is necessary. This is done in the bakeshop by weighing out the ingredients. Liquid can be measured by volume but with large quantity, it is more accurate to scale out each and every ingredient. Pay special attention to spices and salt. Salt plays an important role in the fermentation of yeast.

Mixing

The purpose of mixing is to give even distribution of the ingredients and to form a smooth dough. This is also the beginning of the gluten formation. When mixing of the dough begins the flour, yeast and other dry ingredients are added to the bowl. Using the dough **hook**, they are mixed to distribute the yeast. The liquid is then added, and thus begins the development of the gluten. As the ingredients come together, they will begin to form a rough dough and pull away from the sides of the bowl. This is referred to as "take up". The dough hook is mimicking the motion of hand kneading by folding and stretching the dough. This helps to from the gluten strands and align them into formation to aid in the rising of the dough.

Bulk Fermentation

This is the beginning of the fermentation of the yeast. They yeast will feed on the sugars and starches it will release carbon dioxide and alcohol. The gluten will work as a net to trap the gases and cause the dough to rise. During this time folding or punching of the dough will take place. The numbers of times the dough is folded will depend on the mixing stage used in the production of the dough. Longer mixing will have a shorter ferment and shorter mixing will have a longer ferment. The fermentation is part of the development of the dough. Improper fermentation time will affect the finished product. Over fermented dough will become hard and tough whereas under fermented dough will not have enough volume.

The dough is placed in a large container that will allow it to "grow" or expand. As it expands, the folds are then given to knock out the gases and allow the fermentation to continue. The dough is tempted to ensure that the ideal temperature is achieved which is normally 80°F. The dough is covered during this time to avoid air hitting it and forming a "skin" or crust that will ruin the texture of the dough. Some doughs can be oiled to avoid this.

Folding

As the dough ferments the yeast east and releases gases. These gases are what causes the expansion of the dough. The purpose of folding is to control this process and help further develop the gluten. Many things can affect the feeding of the yeast and too much carbon dioxide is just one. The folding releases the gases and allows the yeast to continue its process. During this release, the dough is folded thus realigning the gluten strands similar to the kneading of the dough. It also helps to keep the temperature of the dough constant.

Dividing or Scaling

This is done by cutting the dough and weighing them out to get and accurate size for the finished product. This is done in stages to ensure the integrity of the dough and finished product.

1. Using a bench **scraper**, you cut the dough as close to the amount you need. Once on the scale you can adjust by adding more or removing the scale and cutting excess off.

2. Rescaling the dough to check for accurate weight.

During the baking process, moisture is lost from the dough due to evaporation. This comes to about 10 to 13 % of the total weight of the finished product. To compensate for this you would add an extra 1 ½ to 2 ounces of dough for every pound of finished baked bread.

When using the **Dutchess press** (see chapter 1) the dough is divided and cut into 36 equal pieces. In this process, the loss moisture should be considered and made up as well.

Pre Shaping or Rounding

Once the doughs are scaled out, they need to be pre-shaped into a form that will allow for the next stage. Most bakers choose to pre-shape their doughs into round shapes. This round form allows for a smooth surface to the dough. The gluten strands are pulled tight and helps for continued fermentation. This also gives the baker the chance to feel the dough for texture and strength of the gluten strands. If the dough is slack or loose then you can give it a tighter shape. If the dough is tough and not to elastic give it a looser form. Try to get your pre-shaped dough as close to the final make up shape as possible.

Bench Proofing

Once the dough has been rounded, it needs to rest. This step can be anywhere from 10 to 20 minutes. This allows the gluten strands to relax and get ready for the final stages of the process. This is done on the bench or work area. The cough is covered with plastic warp but not tight. It will continue to ferment and rise.

Make up and panning

This is the point where the dough is shaped into the shape of the finished product. The shapes vary depending of the types of bread you are making: Rounds, oblongs, baguettes, dinner rolls. The way the dough is made up will depend on the desired crumb of the finished product. For a tight crumb make sure all gas bubbles are removed during this phase. If an open crumb is desired be gentle and to preserve the air holes. Any gas bubbles left in the dough will leave a hole in the finished product.

Proofing

This occurs in two ways: proof box or in a warm dry place. If you are using a proof box, the temperature and humidity must be set according the formula of the type of bread you are making. High fat breads usually proof at a lower temperature to avoid the butter melting and leaching out of the dough. The dough should double in volume and spring back lightly when touched. If you attempt to degas your bread after it is proofed it will NOT rise in the oven. This is the end of the fermentation and rising stages. The amount of time a dough proofs will vary from 30 minute to 2 hours depending on the dough.

Baking

This is the stage of cooking the bread. The oven is set for the conditions needed to produce the finished desired result. The ovens used in class are the convection oven and the deck oven. Each cooks differently due to the type of oven. Breads are finished in different ways before going into the oven. They can be washed with water, egg wash, heavy cream, as well as other types of washes. These will affect the finished products crust and look. Both class ovens have the ability to inject steam to help with crust formation allowing for rapid expansion without

splitting the crust. It also helps in heat distribution and helping with oven spring. Oven spring is the final rise that occurs in bread once it begins to cook. This then sets the structure of the bread as the temperature of the dough rises the yeast dies at 140°F. Scoring is another useful techniques used to avoid the splitting of the dough as it rises in the oven. Slits are made to the top of the dough with a lame (curved razor tool) or sharp knife.

Cooling

Once the bread is cooked to the correct internal temperature (this varies for types of breads), then it is removed from the oven. The cooked bread is placed on a cooling rack. The cooling allows for many things to happen. Excess moisture is released from the bread as it cools and the alcohol created by the fermented yeast evaporates. Most breads are allowed to cool on the pan. Breads baked in loaf pans or other pans can be removed and set on its side so that moisture does not condense on the bottom causing the crust to become soggy.

Storing

The bread can be stored in moisture proof bags to prevent staling or wrapped tightly with plastic wrap in their pans. Before either occurs, the bread must be cooled completely.

- Wrapping or bagging hot or warm bread will cause moisture to form and thus making the bread wet and soggy.

- Once properly bagged, bread can be kept at room temperature if use occurs within a few hours or days, or frozen for longer periods.

- Putting breads in the refrigerator will increase the staling of the bread as will leaving them unwrapped on the rack.
- Breads that have a hard crust should not be wrapped, this will affect the texture of the finished crust.

Topic 5: Pastry Doughs

These doughs differ from the previous doughs in that they are not leavened. They have a more tender crumb and are usually used as a base to be filled such as tarts. The names of these are derived from the French and give indication to the texture of the finished product.

Tart Doughs

Tarts are made in shallow fluted pans. The doughs that are used have a tender crust, are made with butter and add to the overall flavor of the tart.

The three main types are discussed below.

1. **Pâté Brisée** - the French translation is broken dough. This name is based on how the dough is put together. The fat is combined with the flour in the same fashion that you would put together a mealy pie dough. The fat is rubbed into the flour until the mixture resembles a coarse meal. There should be visible pieces of butter. This allows the flour particles to be surrounded by fat thus hampering the formation of gluten resulting in a tender pastry.

2. **Pâté Scurée** – the French translation is sugared dough. This dough has more sugar the pâté brisée. The extra sugar helps to keep this dough tender thus making it softer and harder to handle. It can be made using either the above method or the creaming method. The finished dough can be used for smaller tarts and pastries as well as a stand-alone cookie.

3. **Pâté Sablée** – the word sablée in French means 'sand', which describes the finished texture of this dough. The recipes usually have more fat than the brisée and less egg, which lends it its finished texture. The most common method for this dough today is the creaming method.

4. **Short dough** – this is a variation of the above doughs. These doughs are tender as well and that is because little gluten is formed during the making of the dough.

Puff Pastry – this dough is a versatile dough that is made in the same fashion as Danish and croissants meaning that is it a laminated dough. The main difference is that this dough has no leavening agent. This dough is cooked at a high temperature thus creating steam from the layers of fat and dough. The steam causes the dough to rise at least an inch more than is normal size. The preferred fat for puff pastry is butter due to its mouth feel and flavor. There are different methods to make puff pastry but the more layers added as well as higher fat content of the recipe will give you a better rise and product.

Makeup and Baking Puff Pastry

It is important to know the proper use of the dough. If you do not handle it properly the dough will not rise nor will it give you the desired finish.

1. Always used puff pastry when it is cool and firm. If it is soft the layers of the dough may stick together when cut thus inhibiting the dough from rising.

2. Use a sharp cutter or knife and always cut straight down. Do not twist the cutters.

3. Once the puff pastry is cut, transfer it to a baking sheet and flip it so that the cut edges are on the bottom. This allows for any layers that are stuck together to become the base of the puff and the remaining layers have the ability to rise.

4. If you are using egg wash, make sure that it is only applied to the top. Avoid anything that will interfere with the side becoming sticky.

5. It is wise to rest the dough once it has been cut to allow the gluten strands to relax and help prevent the dough from shrinking.

6. If you decide to reuse the excess dough the press them together and laminate them with the 3 fold, creating more layers.

7. Always bake the puff pastry at a temperature of 375°F to 400°F. The high heat is need to create the moisture that turns into steam that will cause the dough to rise.

8. If you are baking large pieces of puff, you can start them at a higher temperature and once they rise, you can lower the oven to finish the cooking process.

Éclair Paste

In the industry it is referred to by the French name *pâte a choux* which means "cabbage paste" because once baked they resemble little cabbages.

This is a cooked pastry dough that can be used in a variety of ways to create both sweet and savory baked goods. The way they are piped out will determine the name given to the finished product.

The dough can be made in a few minutes and is usually used as soon as made. It will form a skin if allowed to sit without being covered with a damp cloth. Once made it should not sit without being used for longer than an hour.

Procedure

1. Bring the liquid, fat, salt and sugar to a boil on the stovetop. Make sure that the mixture is at a rolling boil. This allows for even distribution of the ingredients and ensure a proper mixing of the dough.

2. Once at a rolling boil add all the flour at one time. Using a wooden spoon stir the flour until it has completely mixed with the liquid. As this happens, the dough will begin to pull away from the sides of the pot.

3. As it pulls away continue stirring. This will cook the raw flour taste out and create a thin film on the bottom. Once this happens, remove the pan from the heat.

4. Continue stirring the mixture. You will see the steam coming from the mixture. As it begins to cool, the steam will lessen. You are cooling the mixture to about 140°F. If you do not take the time to cool down the dough the eggs will scramble when added.

5. Once the dough has cooled down you will begin to add the eggs a few at a time. As the eggs are added to the dough it will look like the dough is breaking – streaks of liquid egg and clumps of dough will be seen. Do not add any more eggs until the dough has come back together. Continue adding the eggs and allowing the dough to comeback together until all eggs have been added.

6. The finished dough should be smooth and slightly slack but firm enough to hold its shape.

   NOTE: **Each recipe is formulated with a specific amount of eggs. There may be some instances when you will have to either add an egg or not use all of the eggs scaled out. It will depend on the conditions at the time the dough is being made.**

Pastries made from pâte a choux:

1. **Cream puffs** – small or large pastries piped out using a round tip. The size is determined by the dessert you want to make.
2. Eclairs – can be made with the round tip also. They are piped out in a line and the size will depend on the tip and what they are needed for.
3. **Paris-Brest** – they are piped using a star tip. The shape represents a bicycle wheel. The shape was created to honor the bicycle race from Paris to Brest which begun in 1891.
4. Gougères – these are savory "cream puffs" while making the dough you can add herbs, spices and cheese to make it savory.

Strudel and Phyllo

These two types of dough are similar in structure. Once made they are very thin layers of pastry that is used for desserts by layering with fat that is melted and brushed on then layered with dough.

Strudel – this dough is made from flour, water and eggs. It is then stretched thin over a floured cloth. The dough is so thin that you can see through it. Learning to stretch the dough take time, patience and skill.

Phyllo - this is the Greek version of strudel dough. It is usually purchased commercially. The thin sheets of pastry are rolled together in a thin plastic covering. When working with you it is best to keep a slightly damp cloth over it to prevent it from drying out. The thin sheet is placed and then melted butter is gently brushed on covering the entire sheet. Another sheet then added and brushed with butter. This continues until the desired amount is reached.

Meringues

Egg whites and sugar are mixed into an airy batter. This is then piped out in various shapes depending on its use. Baked in the oven until dried. Although not a typical pastry it can be used in the same way as some pastries and as layers for cakes.

Topic 6: Custards

When you hear the word custards we all think of pudding. Pudding, however, is a word that can describe many different types of dishes in the culinary world. There are savory dishes such as blood sausage that are also knows as puddings. For the purpose of this chapter we are going to discuss the custards that are served in restaurants as dessert.

There are two types of main custards: **cooked** and **baked**.

Cooked Custards

These types are cooked and the liquid used is thickened by the coagulation of the egg proteins that are added.

NOTE: **When cooking custards the internal temperature cannot be more than 185°F. Anything above this will cause the proteins in the egg to curdle.**

- ***Syneresis*** is the sudden release of moisture contained within protein molecules, usually caused by excessive heat, which over-hardens the protein shell. Moisture inside expands upon heating. The hard protein shell pops, expelling the moisture.

Therefore, when a baked custard is over cooked, the water seeps through causing holes in the custard.

Stirred Custards

Stirred Custards – these custards are cooked over a heat source and are stirred to reach the desired level of thickness. It can then be poured into a pan, covered and refrigerated.

1. **Crème anglaise** – this is a stirred vanilla custard sauce. \
2. **Pastry Cream** – a cooked custard that is thicken with both corn starch and egg. This is gives a much more stable and thicker product.

3. **Blancmange** – this a custard that is thickened with only cornstarch. Can be poured or molded depending on the amount of starch used.

4. **Cream puddings** – these are similar to pastry cream but with less starch. They take flavorings well and are suited to fillings for custard pies.

5. **Gelatin set custards** – 'panna cotta' – the milk and cream is heated, and sweetened with sugar then the bloomed gelatin is added to the hot liquid to melt it. The mixture is poured into mold and chilled until set.

6. **Crémeux** – In French, the word means "creamy". The thickening agents are usually one of these three: gelatin, chocolate, or butter.

Baked Custards

Baked Custards – these custards are baked in the oven until the custard is firm. It is then removed, cooled and then covered and put under refrigeration.

The make-up is similar to that of the stirred custards. They contain dairy, sugar, and eggs (usually whole eggs). The whole egg gives the custard more stability and a thicker texture. While using just the yolks makes the custard richer with a softer texture. Baked custards are versatile. They can be stand-alone desserts, pie fillings, and as bases for other desserts. A good quality baked custard will hold a clean sharp edge when cut.

Baked Custard Procedure

1. The milk or cream is scaled, and slowly incorporated into the eggs. This aid is a reduced cooking time, and allows for a more evenly cooked product.

2. Once the base is finished mixing skim off the excess foam. Left in the when finished cooking they will mar the finished custards appearance.

3. Bake the custards at a 325^{o}F. Lower temperature allows for less chance of overcooking and curdling the custards.

4. A water bath is usually used for most custards. This allows the custard to cook evenly as a whole. The outside edges cook evenly with the middle of the custard.

5. To determine if the custard is done, you can use a thin bladed knife. Insert it into the center of the custard and if it comes out clean, it is done. There will be come carry over cooking due to the residual heat of the custard. Therefore, if the center is set but not completely it will finish cooking once out of the oven.

Other types of baked custards

Some baked custards have additives such as pumpkin or sweet potato pies. These are still considered baked custards because of the additions of eggs, which are used to set the structure of the custard. They do not require a water bath to bake but the lower temperature aids in even cooking.

Cheesecakes also fall into this category. The custard is thicker but the eggs are still the ingredient that gives the cake structure. It is baked using the water bath due to the density of the product. Even cooking is need to produce a smooth finish once cooked. Over cooking will cause the cheesecake to crack. Once done you can turn off the oven, crack the over door and allow to cool in the oven.

Steamed Desserts

These puddings are cooked using steam. They can be done in a commercial steamer or by creating the steamer on the stovetop. There are a few varieties but the most common is the Christmas pudding also known as plum pudding. These then to be very dense and rich. They are usually served when the weather is colder to warm one up.

Topic 7: Cake & Buttercreams

To make a great cake the baker must take great care in creating the batter. The cake itself is a base for which the rest of the ingredients are built upon. The process starts with high quality ingredients. The rest is an art from that follows specific formulas and mixing methods to produce a light and delicious finished product.

There are three main goals you to making a good batter:

1. Combining the ingredients into a smooth homogeneous batter.
2. Incorporating air into the batter.
3. Having the proper texture in a finished product.

The Batter

All cake batters are a basic emulsion of fat and water. As the two ingredients are mixed, the fat molecules encase the water droplets. Then, as the other ingredients are added, this emulsion can break. If so the batter will looked curdled. This happens when the fat separates from the water and they are then just mixed together with the other ingredients in the batter.

Issues that can lead to curdled batters:

1. **Using the wrong type of fat** – each recipe is formulated for a specific fat. Do not substitute fats. High ratio shortening cannot hold the same amounts as butter. Also butter has water in is so formulas that contain butter limit the water to what that product can hold and remain emulsified.

2. **Temperature of the ingredients** – the best emulsification happens at room temperature, which is about 70°F.

3. **Mixing process** – do not rush the process. The formation of the emulsification must be done correctly for it to hold. Higher speeds do not speed up the process. Air cell formation is accomplished at a lower speed.

4. **Adding ingredients** – if liquids are added to quickly, the other ingredients cannot adequately absorb them. They are usually added in stages and alternate with dry. This helps to keep a smooth homogeneous mix.

Air Cells

Proper procedure needs to be followed to obtain proper air cell formation. This is done by slowly incorporating the butter and sugar in the creaming method. Too high a speed will cause the mix to become warm and not allow for proper formation. In addition, the temperature of the ingredients play a part in this as well. Butter and granulated sugar combinations at low speed create the best air cells for a good cake texture.

Texture of the Batter

The finished texture of the baked cake depends on the ingredients, and how well they were put together. If the air cells were formed small and uniformed, the crumb will be smooth and fine. A coarse crumb will be because of large or irregular formation of the air cells. Unlike breads, you do not want a lot of gluten formed in the cake. Gluten will give a tough product. Cake flour, which is low in protein, is used to insure gluten formation is at a minimal. Also the way the ingredients are mixed together.

Mixing Methods for Cakes

1. Creaming Method

a. All of the ingredients are scaled out accurately and at room temperature.

b. The fat is placed into the mixing bowl fitted with the paddle attachment. On low begin to mix until it is smooth and creamy. There should be no lumps.

c. Scrape down the sides of the bowl and add the sugar. On a low/medium speed, you will begin the process of creaming the fat and sugar together. You will cream them until they are white, light and fluffy. This will take anywhere from 5 to 10 minutes. Notice the color change of the butter.

d. Stop and scrape down the bowl. The eggs will be added a little at time depending on how many you have. Before you add the next egg, make sure that each addition is completely absorbed into the mix. The mix will return to a light and fluffy texture.

e. The addition of the dry and liquid ingredients will begin once all the eggs have been added. Scrap down the bowl continuously to ensure proper mixing.

f. You will start with the dry and end with the dry. The patter for adding dry in liquid is:
    - ¼ of the dry is added. The mixer is turned on, and you will mix until JUST incorporated. Turn off and scrape the down the bowl.

- 1/3 of the liquid is added. This is mixed until just blend. Again, scrape down the bowl.

- These steps are repeated until all the ingredients have been added. Scraping and alternating the ingredients ensure an even mixing of the batter.

NOTE: **Vanilla and other spices can be added once the fat and sugar is creamed or to the liquid ingredients. Some bakers prefer to sift the spices into the dry ingredients. If adding melted chocolate to a batter it can be added to the creaming method paying attention to the temperature of the chocolate.**

2. Chiffon Method

a. Scale out all ingredients accurately. All should be room temperature.

b. Sift all dry ingredients into the bowl of the stand mixer fitted with the paddle attachment. Add part of the sugar at this time as well.

c. With the mixer on low slowly steam in the oil. Next you will add the eggs yolks, followed by water and any flavorings. As this is being added you should stop the mixer and scrape down the bowl to ensure proper mixing of the batter.

d. In another bowl, you will begin to whip the egg whites to soft peak. Then add the cream of tartar and remaining sugar. Whip to stiff peak.

e. Fold the whipped egg whites into the batter.

f. Cake pans should only be greased, and lined on the bottom. If the sides are greased the cake will not rise. It needs to cling to the side of the pan to rise.

Type of Cakes

1. **Butter Cakes** – these are high fat cakes. The fat used for these cakes is butter. This gives the cake a better mouth feel. Butter melts at body temperature whereas shortening does not. Some bakers will prefer to use shortening because it is cheaper and easier to emulsify.

2. **Chiffon or Angle food** – these are egg foam cakes. For Chiffon cakes a leavener is added but for Angel food the air whipped into the egg whites is the primary leavener. These cakes also have little to no fat added.

Baking and Handling of Cake

The method of baking will ensure that your cake is at its best. To ensure this following the right guidelines are essential.

- **Always preheat your oven**.
- **The oven and its shelves should be level**. If they are not the batter will bake unevenly.
- **Make sure the pans are spaced evenly apart.** Proper air circulation will ensure even baking of each cake.
- Bake at the right temperature. Each cake requires different baking temperatures. This will affect the way the cake sets.
    - **Too high a temperature** will cause the top to set before it is risen enough.
    - **Too low a temperature** can lead to it not rising enough and falling
- **Some ovens have steam.** This can help delay the crusting of the layer and allow for a more even rise in some cakes: creamed, two-stage and one-stage cakes.
- **Do not open the oven until the cake has fully risen** and the structure has set. This can cause the cake to fall.

Signs of Doneness

- If the cake appears to be pulling away from the sides of the pan.
- When the top is lightly touched, it springs back.
- If you stick a cake tester in the center, it comes out clean.

Cooling and Removing from Pans

- Cakes should be cooled in their pans for 15 to 20 minutes or until warm to the touch. Removing the cake before can cause it to crack. Remember that they are fragile and soft.
- Remove cakes from the pan and place on a cooling rack to finish cooling.
- Sheet cakes can be turned out onto cake boards or another sheet pan. Top the cake with parchment, then the cake board. Flip the pan leaving the cake on the cake board. Another

cake board is now put on the bottom and both are inverted leaving the bottom of the cake on the board. Remove the parchment and let cool.

NOTE: **Angel Food and Chiffon cakes need to be cooled completely in their pans. The pan should be inverted but not touching the tabletop. There needs to be room for air circulation.** This prevents the cake from falling in on itself. The cake will not fall out of the pan because it is clinging to the sides. Once they are cooled you can turn them over and with a knife remove them from the pan.

Buttercreams

Once the cake is baked and cooled it's time to finish it. From the simple to the extravagant cakes can be finished in a variety of ways. Simple buttercreams, fondant, marzipan or poured ganache can be used to turn something simple into works of art.

Buttercreams

Light and fluffy frosting that can be used in decorating a cake. They range in simple to complex formulas that differ in texture and taste depending on the type you make.

3 Classical Butter Creams

These buttercreams all have a base that begins with a meringue. Each is done in a different style. These buttercreams are soft and smooth in texture.

1. **Swiss Buttercream** – the base for this is Swiss meringue. The egg whites and sugar are heated over a warm bain marie until the sugar melts. Once this happens whip on high speed until the meringue cools and doubles in size. Slowly the cold butter/shortening combination is incorporated. As this happens the mixture will get to a stage that it looks broken. Keep adding the butter. It will come together. Any flavorings can be added at this time.
2. **Italian Buttercream** – the base for this is Italian meringue. The sugar and water are cooked to 240°F. While this is happening whip the eggs whites to soft peaks. Pour the sugar into the whipping egg whites and whip until cool. Cut the butter into the mixture until it is all added. It will look curdled but continue to add the butter and mix until it is smooth and creamy.

3. **French Buttercream** - this buttercream has an egg yolk base. The sugar and water are cooked to 240°F. Egg yolks are whipped to ribbon stage (thick and light in color). Pour the cooked sugar into the whipping yolks. Continue whipping until the mixture has cooled off and is thick. The butter is added slowly allowing the mixture to absorb the butter before the next addition is added. Flavorings can be added at this time.

American Buttercream

This is a popular buttercream frosting that is primarily used in North American and "frosting" of choice for most people in the South. This buttercream is simple to make and requires no cooking. It has a sweet taste with a fluffy and creamy texture. It is easily flavored and when set has a dry sugar "crust" exterior. The recipes for it vary depending on the baker/user but main ingredients are the same.

- ✓ **Plain American Buttercream** – butter (shortening) is added to the bowl of a stand mixer fitted with the paddle attachment. It is creamed until smooth and fluffy. Powdered sugar is added and mixed in. Flavorings are added at this time. The mixture is thick and will be thinned out with cream or water to the desired consistency. This buttercream has a very low melting temperature. It is not a good use for outdoor cakes in the summer months.

Royal Icing

This type of frosting is used in decorative decorating of cakes, cookies and other edible pastries. It can be used as a thick frosting for drop string, outlines of shapes and for making edible flowers. When thinned out it can be used to fill in outlined shapes for a beautiful finishing touch. This frosting dries hard to the touch.

- ✓ **Royal Icing** – egg whites are added to the bowl of a stand mixer fitted with the paddle attachment. The whites are mixed to just break them up. Next cream of tart is added along with powdered sugar. The mixture is mixed until it is stiff and fluffy with soft peaks. To keep this useable while working it needs to be covered with a damp cloth.

Glazes

Some cakes are finished with a glaze a thin almost see through coating. This is a mixture of ingredients that is poured over a finished product to leave it with a beautiful shiny surface. The purpose is twofold in that it serves as a finish and protection to avoid the drying out of the product.

There are primarily two types of glazes:

1. **Chocolate glazes** – these consist of chocolate melted by pouring heated cream over mixed with either butter, glucose or corn syrup. Once cool to the touch it is poured over a cake. If cooled correctly, it can be whipped into a frosting to finish a cake as well.

2. **Gelatin glazes** - these are done with a combination of ingredients but the primary setting of the glaze is done with gelatin. Bloomed gelatin is melted, then added to other ingredients, mixed, and immediately used. If it is allowed to sit and cool, it will set.

Other Cake Coatings

1. **Rolled fondant** – can be made, or purchased commercially. A thick edible sugar paste that can be used to cover and decorate cakes. It can be molded into shapes, flowers, animals etc. It can be used as is, or colored for added garnish. This gives the outer layer protection and keeps it from drying out.
2. **Marzipan** – a decorative coating made from almond paste, sugar and corn syrup. It has a very sweet taste and can be used to make accent garnishes as well. It is also used to make marzipan candy, and used as a filling for truffles.
3. **Modeling Chocolate** – a paste that is made from melted chocolate and corn syrup. When done it is thick and easily molded. Texture is similar to thick playdough.

Cake Syrup

From scratch cakes, differ from box mix cakes. They lack the preservatives that are added to keep those moist as they sit. To add some moisture to your cake a cake syrup is used. It is brushed onto layers and allowed to soak it. It is a basic 1:1 ratio of water to sugar. Flavoring can be added as well as liquors or spirits.

Cake Decorating

One of the most important things you need to begin the decorating of a cake is the design of the cake. Nothing can really be done without this. The planning of how it is assembled, frosting, fillings and garnishes are all done based on the initial plan. Proper planning of the cake lends to easy assembly and beautifully finished product.

The Cake Layers

Once your layers are baked, de-panned, and cooled they need to be prepped for assembly.

1. All excess crumbs are removed with a dry pastry brush.
2. If tops are slightly mounded, they can be made even with the addition of buttercream. If there is a high rounded top, it needs to be leveled by cutting the top even.
3. Proper cake board is added under the layer.
4. Cake layers and be cut in half. This increases the amount of filling and frosting adding additional height to your finished cake as well as increasing the cake to filling/frosting ratio.
5. Cake layers are brushed with cake syrup excluding the top layer.
6. If there is a filling other than buttercream, a dam is created to lock the filling it. This is a circle of frosting piped around the perimeter of the layer.

7. The bottom of the cake is the straightest piece. It should always be used as the last layer added to the cake. This gives a straight and level surface to the finished cake.
8. Once the layers are assembled, the crumb coat is added. This is a very thin layer of frosting. Its purpose to lock in any extra crumbs that are on the cake. Once this is done, it is place in the refrigerator to set.
9. Once the crumb coat is set, the finishing frosting is added. This addition is the final buttercream coating unless a rolled coating will be used. Once finished this should not contain any crumbs. The cake is now ready for decorating.

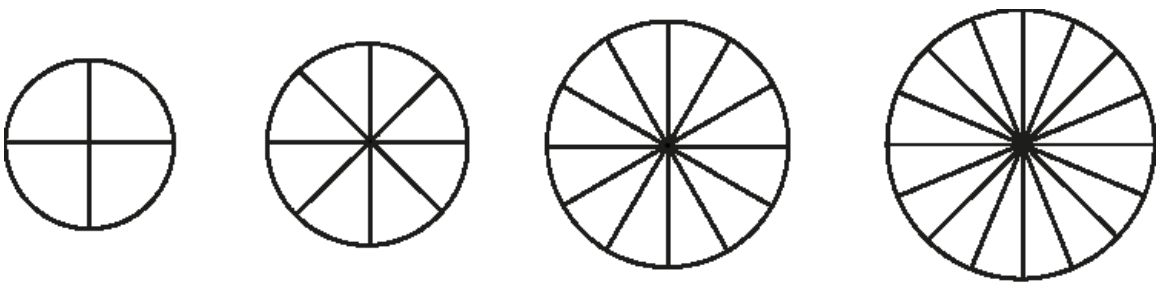
Cake Cuts

There are three main cake cuts that see the most use for round cakes or pies are the **'8' cut**, the '**12' cut** and the '**16' cut**.

1. **The '8' cut:** The cake is cut in half. Each half is then cut in half. From there each quarter is then cut in half. Each slice should be the same size.

2. **The '12' cut:** is a little more difficult. The cake is cut in half. Each quarter piece is then cut evenly into 3 pieces. Each piece should be the same size.

3. **The '16' cut:** is the most difficult. Each cake is cut in half. Each quarter is then cut in half. Each eight is then cut in half. Each slice should be the size.



12 cm
4 inch
4 servings

15 cm
6 inch
6-8 servings

20 cm
8 inch
10-12 servings

23 cm
9 inch
14-16 servings

Topic 8: Pie Dough & Ice Cream

Pie

The first recorded pie recipe was found to be written by the Romans. The first popular pies were traditionally meat pies. Today pies are filled with a variety of fillings such as meat, fruit, and custards. The first pies were not baked in the crust that we associate with pies. They were baked in "reeds" and only the fillings were made. Pies gains popularity thought out Europe with the first Cherry Pie credit going to Queen Elizabeth I. Pies came to the Americas with the English settlers but the thick crust was seen as a vessel for the fillings. As the pie evolved the crust went from vessel to part of the dish. Today Pies are a traditional American dessert.

The Ingredients for Pie Crust

There are two types of pie crust flaky and mealy. Both use the same simple ingredients flour, fat, salt and water. The difference between the two are the way the fat and flour are put together.

1. **Flour** – the ideal flour for pie crust is pastry flour. It has just enough proteins to form a gluten structure that will give the dough structure but keep the gluten low enough to keep the dough flaky. Pie dough should be mixed until the ingredients are just combined.

2. **Fat** – hydrogenated shortening is the most popular fat to use for pie dough. It is soft enough to mix in but strong enough to produce a workable dough. Butter is also used but it has two down falls – it is expensive and has a low melting point. What makes it ideal is the mouth feel and flavor it adds to the curst.

3. **Liquid** – the cheapest and best liquid to add is water. Ice water is normally used because it keeps the fat at a stable temperature and helps prevent it from melting. Milk can be used but it will cause the crust to brown quickly.

4. **Salt** – this adds to the flavor of the crust. It is best to mix it with the flour or dilute in liquid to ensure even distribution.

Flaky Pie Dough

The fat for this dough is rubbed, or cut into the flour, until the pieces of butter are the size of a pea or hazelnut. This allows for some gluten formation when the water is added. As the dough comes

together, the pieces of fat are flatten out with the dough thus giving it the flaky texture. Used often in pies that call for blind baking as well as the top for covered pies.

Mealy Pie Dough

The fat for a mealy dough is completely cut into the flour until the mix resembles a coarse cornmeal. There should be no lumps of fat in the mixture. The flour particles have been completely encased in fat and there less liquid is used to bind this one because the flour cannot absorb it. This type of dough has a few advantages over the flaky crust.

- This is a softer crust because gluten development is kept low due to the low absorption of water with the flour.
- Once baked this dough does not absorb much liquid so it will not become soggy from its filling.

NOTE: **This is a popular crust for fruit and custard pies because it does not become soggy.**

Ice Cream

Ice cream is simply a mixture of milk, cream, sugar, eggs, and flavorings that are combined and frozen in a machine that spins the mixture into a smooth and cream dessert. There are various names for the delectable treat but all are churned, and frozen. The constant movement of the machine ensure that the mixture does not freeze into a sold block. Most ice cream machines whether commercial or home style consist of the tube with a paddle that spins. A cooling system surrounds the tube freezing the mixture. As the paddle turns, it keeps the forming ice crystals in motion incorporating air into the ice cream, which leads to its texture.

Overrun is the name given to the air that is added to ice cream as it is mixed. This added air will increase the amount of finished product. Overrun is listed on packing in a percentage of the finished product. If you begin with a gallon of ice cream base and once spun, you finish with 2 gallons of ice cream then your overrun percentage is 100%.

Difference in the Names

1. **Ice Cream** – made from a combination of milk, cream, sugar, flavoring and eggs. Has a richness and smoothness to the finished product. Has a good fat content that adds to the mouth feel. If made correctly should have small ice crystals that were frozen quickly with a good amount of overrun thus allowing for a smooth even melt in the mouth.

2. **Gelato** – Italian style ice cream that is made usually from milk, sugars, and flavorings. They have a low fat content and, if made without fillers, will have a light texture and good melting quality. The overrun is usually low adding to the smoothest of the frozen dessert.
3. **Sherbets** – fruit purees, water and sugars. They are spun in an ice cream machine. They have not fat added.

4. **Granita** – fruit, water, flavorings and sugars. The fruit is puréed and flavorings can be added such as lemon juice and sugar. The mixture is place in a shallow pan and then placed in the freezer. As it begins to freeze a fork is used to flake the ice crystals into the mixture. This is done in stages until the mixture is completely flaked and frozen.

Success with Ice Cream

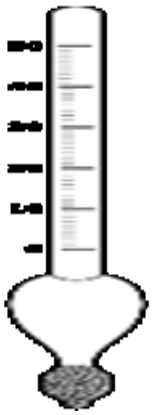
As with anything, you make in the kitchen a formula or recipe is used. At times, you can divert from the recipe and the product is the same or better. However, in the pastry world, the recipes are specific and deviations can ruin the outcome if not compensated for.

When it comes to ice cream this holds true. Too much fat and the mixture can have a grain texture when spun. Too much water and the ice crystals can become too big. Sugar is another ingredient that can be overused and thus ruin the final outcome of your frozen dessert.

When creating your own recipes for these items it helps to know how to determine how much sugar can be added. There are ways to do this using many different objects.

Brix – this is the sugar content of an aqueous solution. The brix meter can be used to test for the amount of sugar in your solution.

Hydrometer - this can also be used to measure the specific gravity of a liquid.



Egg – this is an easy way to measure the amount of sugar in a solution. If the water contains enough sugar in water then the egg will float. This happens because the egg will be less dense than the solution.

Topic 10: Cookies

One of the most varied items in the pastry world is the cookie. They are made into various shapes, sizes and **textures**. From chewy to soft batch, crunch to bite size bits. Depending on where you are in the world the name cookie will not mean anything. Only in North American do we consider a cookie a cookie!

As with cakes, the word cookie translates in "little cake" there are different methods used to make them. The most popular is the creaming method.

Creaming method

1. Accurately scale ingredients at room temp
2. Sugar and fat are added to bowl with paddle attachment on low speed.
3. Scrape down bowl before each addition of ingredients
4. Cream fat and sugar. Amount of air will affect cookie texture.
5. Add liquid and eggs.
6. Sift dry ingredients and add. Mix until just combined. Over mixing will cause gluten formation.

Different types of cookies

1. **Pipped** – this dough is soft enough to be put into a piping bag fitted with a tip and piped out. The dough will hold its shape once piped.

2. **Dropped** – using a scoop or spoon this dough onto a prepared cookie sheet. These can usually have additions such as chocolate chips, nuts, and candies added.

3. **Rolled** – the dough is pinned out with a rolling pin onto a lightly floured surface. Cookie cutters are used to stamp them out.

4. **Molded** – the dough is molded either by hand or with a stamp into the desired shape.

5. **Icebox** - this dough is a bit stiffer. The dough is rolled into a log and then refrigerated. When ready to bake it is cut into equal sizes and placed on the prepared cookie sheet.

6. Bar- the dough is pined into a sheet pan, baked and cut into the desired shape. Another method is to make the dough into a log and bake.

Notes:

www.piecouncil.org/events/nationalpieday/historyofpies
https://en.wikipedia.org/wiki/Brix
Hyhttps://creativecommons.org/licenses/by/3.0/drometer/dp/B01LZFXT7S
https://en.wikipedia.org/wiki/en:Creative_Commons
https://www.wheatfoods.org/
https://en.wikipedia.org/wiki/en:Creative_Commons
https://creativecommons.org/publicdomain/zero/1.0/deed.en
https://en.wikipedia.org/wiki/en:Creative_Commons
http://www2.ca.uky.edu/agcomm/pubs/4AJ/4AJ05PO/4AJ05PO.pdf
https://joythebaker.com/2013/10/baking-101-natural-vs-dutch-processed-cocoa-powder/
https://creativecommons.org/licenses/by/2.0

BAKING GLOSSARY

1-2-3 dough: A pastry dough made of one part sugar, two parts fat, and three parts flour, by weight.
Absorption: The amount of water a flour can take up and hold while being made into a simple dough. Absorption is based on a predetermined standard dough consistency or stiffness; expressed as a percentage of the weight of flour.
Active dry yeast: A dry, granular form of yeast that must normally be rehydrated before using.
Aerobic: Requiring oxygen to live and grow; said of some bacteria.
Air cell: A tiny bubble of air, created by creaming or foaming that assists in leavening a dough or batter.
Allergen: A substance that triggers an allergic reaction.
AH-purpose flour: Flour formulated to be slightly weaker than bread flour so it also can be used for pastries.
Allumette: French for "matchstick"; any puff pastry item made in thin sticks or strips.
Almond paste: A mixture of finely ground almonds and sugar.
Amylase: An enzyme in flour that breaks down starches into simple sugars.
Anaerobic: Requiring an absence of oxygen to live and grow; said of some bacteria.
Anaphylaxis: A sudden and severe allergic reaction of the immune system.
Angel food cake: A type of cake made of meringue (egg whites and sugar) and flour.
Angel food method: A cake-mixing method that involves folding a mixture of flour and sugar into a meringue.
Apple charlotte: A dessert of apples cut up and baked in a mold lined with bread slices.
AP weight: As purchased, the weight of an item before trimming.
Artisan bread: Bread made by a skilled manual worker, usually refers to handmade breads made using traditional methods and with natural ingredients only.
Ash: The mineral content of flour; expressed as a percentage of the total weight.
Autolyse: A resting period early in the mixing procedure of yeast doughs during which the flour fully absorbs the water.
Baba: A type of yeast bread or cake that is soaked in syrup.
Babka: A type of sweet yeast bread or coffee cake.
Baget: A ring-shaped lean yeast dough product made from a very stiff dough.
Bagged: A cookie makeup method in which the dough is shaped and deposited on the pan or sheet, using a pastry bag.
Baked Alaska: A dessert consisting of ice cream on a sponge cake base covered with meringue and browned in the oven.
Baked custard: A custard that is baked undisturbed so it sets into a solid. Baked meringue: Any meringue mixture that is baked until dry.
Baker's cheese: A soft, unaged cheese used to make pastry fillings, cheese-cake, and similar products.
Baker's percentage: A method of expressing ratios of ingredients in a baking formula in which the weight of each ingredient is expressed as a percentage of the weight of the flour.
Baking ammonia: A leavening ingredient that releases ammonia gas and carbon dioxide.

Baking chocolate: A chocolate product in which another fat is substituted for part of the cocoa butter.
Baklava: A Greek or Middle Eastern dessert made of nuts and phyllo dough and soaked with syrup.
Bar: A cookie makeup method in which the dough is shaped into flattened cylinders, baked, and sliced crosswise into individual cookies; also, a cookie made by this method.
Barm: A thin or batter-like sourdough starter.
Batter: A semiliquid mixture containing flour or other starch, used for the production of such products as cakes and breads and for coating products to be deep-fried.

- **Baume:** A unit of measure indicating the specific gravity of a solution often used to indicate sugar concentration.

Baumkuchen: A cake made by adding one thin layer of batter at a time to a pan and browning lightly under a broiler after each addition, repeating until the cake is the desired thickness.
Bavarian cream: A light, cold dessert made of gelatin, whipped cream, and custard sauce or fruit.
Bavarois: French for Bavarian cream.
Beignet soufflé: A type of fritter made with eclair paste, which puffs up greatly when fried.
Benching: An intermediate fermentation and resting period for yeast doughs, after folding and before rounding or pre-shaping.
Betty: A baked dessert consisting of layers of fruit and cake crumbs.
Biga: A yeast pre-ferment made as a stiff dough.
Biscuit method: A mixing method in which the fat is mixed with the dry ingredients before the liquid ingredients are added.
Black Forest torte: A chocolate sponge layer cake filled with whipped cream and cherries.
Blancmange: (l) An English pudding made of milk, sugar, and cornstarch. (2) A French dessert made of milk, cream, almonds, and gelatin.
Blitz puff pastry: A type of pastry mixed like a very flaky pie dough, then rolled and folded like puff pastry.
Bloom: (1) A whitish coating on chocolate caused by separated cocoa but- ter. (2) To hydrate gelatin. (3) The relative strength or gelling power of a grade of gelatin.
Blown sugar: Pulled sugar made into thin-walled, hollow shapes by being blown up like a balloon.
Boiled icing: Italian meringue used as a cake icing.
Bolting: The process of sifting flour, primarily to separate the bran.
Bombe: A type of frozen dessert made in a dome-shaped mold.
Boston cream pie: Not a pie, but a sponge cake or other yellow cake filled with pastry cream and topped with chocolate fondant or confectioners' sugar.
Boulanger: The bread baker, who prepares breads and other yeast goods, including such breakfast items as brioche, croissants, and Danish pastry.
Boulanger, A.: An eighteenth-century Parisian credited with starting the first restaurant.
Bran: The hard outer covering of kernels of wheat and other grains.
Bran flour: Flour to which bran flakes have been added.
Bread flour: Strong flour, such as patent flour, used for breads.
Break system: A milling system to produce various grades of flour by repeatedly breaking the grains between rollers, and sifting.

Brioche: Rich yeast dough containing large amounts of eggs and butter; a product made from this dough.
Brix: A unit of measure indicating the sugar concentration of a solution.
Brown sugar: Regular granulated sucrose containing impurities that give it a distinctive flavor and color.
Buttercream: An icing made of butter and/or shortening blended with confectioners' sugar or sugar syrup and, sometimes, other ingredients.
Butterfat: The fat in dairy products. Also called milk fat.
Buttermilk: (1) The milky liquid drained off after cream is churned to make butter. Rarely sold. (2) Milk, usually low fat or fat-free, that has been cultured by bacteria to resemble the original buttermilk (definition 1).
Cabinet pudding: A baked custard containing sponge cake and fruit.
Cake flour: A fine white flour made from soft wheat.
Calorie: The amount of heat needed to raise the temperature of 1 kilogram of water 1 degree Celsius.
Cannoli: Fried Italian pastries made in tube shapes, generally with a sweet cream or cheese filling (singular form: cannolo).
Caramelization: The browning of sugars caused by heat.
Caramelize: To change sugar into caramel by means of heat.
Carbohydrate: Any of a group of compounds composed of carbon, hydrogen, and oxygen atoms, including starches and sugars that supply energy to the body.
Careme, Marie-Antoine: Important and influential nineteenth-century cook and pastry chef.
Carotenoid: An orange-yellow pigments present in many plant products, including unbleached flour; responsible for the creamy color of flour.
Cassata: An Italian-style bombe, usually with three layers of different ice creams, plus a filling of Italian meringue.
Cast sugar: Sugar boiled to the hard-crack stage and then poured into molds to harden. Also called poured sugar.
Celiac disease: A reaction to gluten in which the lining of the intestine is damaged.
Celsius scale: The metric system of temperature measurement, with O"C at the freezing point of water and 100°c at the boiling point of water.
Centi-: Prefix in the metric system meaning one-hundredth.
Challah: A rich egg bread often made as a braided loaf.
Charlotte: (1) A cold dessert made of Bavarian cream or other cream in a special mold, usually lined with ladyfingers or other sponge products. (2) A hot dessert made of cooked fruit and baked in a special mold lined with strips of bread.
Charlotte ring: A metal ring used as a mold for charlottes and other desserts.
Chef de cuisine: The head of a kitchen.
Chef garde manger: Pantry chef.
Chemical leavener: A leavener such as baking soda, baking powder, or baking ammonia, which releases gases produced by chemical reactions.
Chiffon cake: A light cake made by the chiffon method.
Chiffon method: A cake-mixing method that involves the folding of whipped egg whites into a batter made of flour, egg yolks, and oil.

Chiffon pie: A pie with a light, fluffy filling containing egg whites and, usually, gelatin.
Chocolate: Any of a number of products made from fermented, roasted, ground cocoa (or cacao) beans. Often with the addition of sugar, flavorings, and other ingredients.
Chocolate liquor: Unsweetened chocolate, consisting of cocoa solids and cocoa butter. Also called cocoa mass.
Chocolate truffle: A small ball of chocolate ganache, served as a confection.
Cholesterol: A fatty substance found in foods derived from animal products and in the human body; a high level of cholesterol has been linked to heart disease.
Christmas pudding: A dark, heavy steamed pudding made of dried and candied fruits, spices, beef suet, and crumbs.
Ciabatta: A type of Italian bread made from a very slack dough deposited on pans with minimal shaping.
Cleanup stage: A stage of yeast dough mixing in which the ingredients become fully incorporated into a dough; so-called because the formed dough "deans up" formerly unmixed ingredients from the mixing bowl.
Clear flour: A tan-colored wheat flour made from the outer portion of the endosperm.
Coagulation: The process by which proteins become firm, usually when heated.
Coating chocolate: A sweetened chocolate similar in appearance to couverture but with other fats substituted for part of the cocoa butter.
Cobbler: A fruit dessert similar to a pie, but without a bottom crust.
Cocoa: The dry powder that remains after cocoa butter is pressed out of chocolate liquor.
Cocoa bean: Seed of the cacao tree. Fermented, roasted, and ground to make cocoa and chocolate products.
Cocoa butter: A white or yellowish fat found in natural chocolate.
Cocoa mass: Unsweetened chocolate, consisting of cocoa solids and cocoa butter. Also called chocolate liquor.
Cold charlotte: A dessert consisting of Bavarian cream made in a mold lined with a sponge-cake product.
Common meringue: Egg whites and sugar whipped to a foam. Also called French meringue.
Complex presentation: A dessert plating style consisting of an arrangement of two or more desserts plus sauces and garnishes.
Complex sugar: A large sugar molecule containing at least 12 carbon atoms. Sucrose or table sugar is a complex sugar. See also Simple sugar.
Compote: Cooked fruit served in its cooking liquid, usually a sugar syrup.
Compressed yeast: Live, moist yeast, made into dense cakes. Also called Fresh yeast.
Conching: A step in the manufacturing of chocolate, the purpose of which is to create a fine, smooth texture.
Condensed milk: Heavily sweetened milk that has had 60% of the water content removed.
Confectioners' chocolate: See Couverture.
Confectioners' sugar: Sucrose ground to a fine powder and mixed with a little cornstarch to prevent caking.
Confiseur: A confectioner, or candy maker.
Contact method: A decorating technique in which the tip of a paper cone of icing stays in contact with the decorated surface.

Contaminated: Containing a harmful substance not originally present in the food.
Cooked fruit method: A method for making pie fillings in which the fruit is cooked and thickened before being placed in the piecrust.
Cooked juice method: A method for making pie fillings in which the fruit juices are cooked, thickened, and mixed with the fruit.
Cookie: North American name for a small, flat, baked treat, usually containing fat, flour, eggs, and sugar. Known in England and other English- speaking countries as "biscuit."
Cornstarch pudding: A sweetened liquid, usually milk and flavorings, boiled with cornstarch to thicken it.
Corn syrup: A syrup made from corn, consisting mostly of glucose.
Corrective action: In the HACCP system, a procedure that must be followed whenever a critical limit is not met.
Coulis: A sweetened fruit puree, used as a sauce.
Coupe: A dessert consisting of one or two scoops of ice cream or sherbet placed in a dish or glass and topped with any of a number of syrups, fruits, toppings, and garnishes; a sundae.
Couverture: Natural, sweet chocolate containing no added fats other than natural cocoa butter; used for dipping, molding, coating, and similar purposes. Also called Confectioners chocolate.
Cracked wheat: A type of wheat meal in which the grains are broken into coarse pieces.
Cream cheese: A soft, fresh cheese with a high milk fat content. Cream pie: An unbaked pie containing a pastry cream-type filling.
Cream pudding: A boiled pudding made of milk, sugar, eggs, and starch.
Creaming: The process of beating fat and sugar together to blend them uniformly and to incorporate air.
Creaming method: A mixing method that begins with the blending of fat and sugar; used for cakes, cookies, and similar items.
Crème anglaise: A light vanilla-flavored custard sauce made of milk, sugar, and egg yolks.
Crème brulee: French for "burnt cream"; a rich custard with a brittle top crust of caramelized sugar.
Crème caramel: A custard baked in a mold lined with caramelized sugar, then unmolded.
Crème chantilly: Sweetened whipped cream flavored with vanilla.
Crème Chiboust: A cream filling made of pastry cream, gelatin, meringue, and flavorings.
Crème fraiche: A slightly aged, cultured heavy cream with a slightly tangy flavor.
Crémeux: A type of cream or pudding consisting of crème anglaise plus one or more thickeners or binders, such as chocolate, gelatin, or butter.
Crepe: A very thin French pancake, often served rolled around a filling.
Crepes Suzette: French pancakes served in a sweet sauce flavored with orange.
Crisp: (1) A baked fruit dessert with a streusel topping. (2) A confection or garnish consisting of a very thin slice of fruit that has been dried.
Critical control point (CCP): An action that can be taken to eliminate or minimize a food safety hazard.
Croissant: A flaky, buttery yeast roll shaped like a crescent and made from a rolled-in dough.
Cross-contamination: The transfer of pathogens to food from another food or from work surfaces or equipment.
Crumb: The interior of a baked item, distinct from the crust. Crumb crust: A piecrust made of cookie crumbs, butter, and sugar.

Crystallize: To form crystals, as in the case of dissolved sugar.
Cuisinier: A cook; the head of a kitchen.
Custard: A liquid thickened or set by the coagulation of egg protein.
Dark chocolate: Sweetened chocolate that consists of chocolate liquor and sugar.
Dark couverture: Couverture consisting of chocolate liquor and sugar; contains no milk solids.
Deci-: Prefix in the metric system meaning one-tenth.
Decor: Small food items whose primary purpose is decoration.
Decorateur: A pastry chef who specializes or is skilled in decorative work, such as showpieces, sugar work, and fancy cakes.
Degree Celsius: Unit of measure of temperature in the metric system. One degree Celsius is 1/100 of the temperature range between the freezing point and the boiling point of water.
Demerara sugar: A type of crystalline brown sucrose.
Dessert syrup: A flavored sugar syrup used to flavor and moisten cakes and other desserts.
Devil's food cake: A chocolate cake made with a high percentage of baking soda, which gives the cake a reddish color.
Diastase: Various enzymes found in flour and in diastatic malt that convert starch into sugar.
Disaccharide: A complex or double sugar, such as sucrose.
Dobos torte: A Hungarian cake made of seven thin layers, filled with chocolate buttercream, and topped with caramelized sugar.
Docking: Piercing or perforating pastry dough before baking in order to allow steam to escape and to avoid blistering.
Double-acting baking powder: Baking powder that releases some of its gases when it is mixed with water and the remaining gases when it is heated.
Double-panning: Placing a baking sheet or pan on or in a second pan to prevent scorching the bottom of the product being baked.
Dough conditioner: Any of a variety of ingredients added by the baker during production of yeast products to improve gluten development, aid yeast fermentation, and delay staling. Also called dough improver.
Dough relaxation: A period of rest in the production of yeast dough during which gluten strands become adjusted to their new length and become less tight.
Dough strength: An indication of the texture and gluten development of a yeast dough; a combination of elasticity, tenacity, and extensibility.
Drained weight: The weight of solid canned fruit after draining off the juice.
Dredge: To sprinkle or coat thoroughly with sugar or another dry powder.
Dried whole milk: A powdered form of whole milk with the water content removed.
Drop batter: A batter that is too thick to pour but will drop from a spoon in lumps.
Dropped: A cookie makeup method in which portions of dough are measured with a scoop or spoon and dropped onto a baking pan.
Drop-string method: A decorating technique in which the tip of a paper cone of icing stays above the decorated surface and the icing drops as a string onto the surface. Also used to suspend strings of icing between two points.
Durum flour: Flour made from durum wheat, a high-gluten wheat, and
used primarily to make spaghetti and other dried pasta.
Dutch process cocoa or dutched cocoa: Cocoa processed with an alkali to reduce its acidity.

Eclair: A cylindrical piece of baked eclair paste with a pastry cream filling.
Eclair paste: A paste or dough made of boiling water or milk, butter, flour, and eggs; used to make eclairs, cream puffs, and similar products.
Egg-foam cake: A cake leavened primarily by whipped eggs; it usually has a low percentage of fat.
Elasticity: The ability of a dough to spring back when it is stretched. Empty calorie: A food that provides few nutrients per calorie.
Emulsified shortening: Shortening containing emulsifiers and used for high-ratio cakes.
Emulsion: A uniform mixture of two or more normally unmixable substances. Endosperm: The starchy inner portion of grain kernels.
English muffin: A yeast dough product made in the shape of a disk and cooked on a griddle.
Enriched flour: Flour to which vitamins and minerals are added to compensate for the nutrients lost when the bran and germ are removed.
EP weight: Edible portion; the weight of an item after trimming.
Escoffier, Georges August: Most important chef of late nineteenth and early twentieth century; organized cooking principles and kitchen hierarchy.
Evaporated milk: Milk, either whole or skim that has had 60% of the water removed.
Extensibility: The ability of a dough to be stretched.
Extract: A flavoring ingredient consisting of flavorful oils or other sub- stances dissolved in alcohol.
Extraction: The portion of the grain kernel separated into a particular grade of flour. Usually expressed as a percentage.
Facultative: Able to live and grow with or without the presence of oxygen; said of some bacteria.
Fat: Any of a group of compounds consisting of chains of fatty acids that supply energy to the body in a concentrated form.
Fermentation: The process by which yeast changes carbohydrates into carbon dioxide gas and alcohol.
Fiber: A type of complex carbohydrate that is not absorbed by the body but is necessary for the proper functioning of the digestive system.
Final development stage: The stage of yeast dough mixing in which gluten becomes smooth and elastic.
Flaky piecrust: A piecrust that has a flaky texture due to layers of fat sandwiched between layers of dough.
Flaky pie dough: A pie dough that has a flaky texture when baked. See
Flaky piecrust.
Flat icing: A simple icing made of confectioners' sugar and water, usually used for Danish pastries and sweet rolls.
Flooding: Covering a plate, or a portion of a plate, with sauce.
Flour-batter method: A cake-mixing method in which the flour is first mixed with the fat.
Flow of food: The path food travels in a food service operation, from receiving to serving.
Foaming: The process of whipping eggs, with or without sugar, to incorporate air.
Focaccia: A flat Italian bread similar to a thick pizza dough.
Fondant: A type of icing made of boiled sugar syrup that is agitated so it crystallizes into a mass of extremely small white crystals.
Food Danger Zone: The temperature range of 40° to l40°F (4.5 to 60°C), in which bacteria grow rapidly.

Food intolerance: A non-allergic reaction to a food that may be characterized by any of a variety of undesirable symptoms.
Formula: A set of ingredients and quantities and, usually, instructions for preparing a bakery product; a baker's recipe.
Fortified nonfat or low-fat milk: Milk that has had all or part of the fat removed and that contains added substances, such as vitamins A and D that increase its nutritional value.
Fougasse: A regional French bread made in the shape of a trellis or ladder.
Four-fold: A technique used to increase the number of layers in puff pastry or Danish pastry by folding the dough in fourths.
Frangipane: A type of almond-flavored cream.
French bread: Any of a variety of crisp-crusted yeast breads usually consisting only of flour, water, yeast, and salt.
French doughnut: A fried pastry made of choux paste.
French meringue: Egg whites and sugar whipped to a foam; also called common meringue.
French pastry: Any of a variety of small fancy cakes and other pastries, usually in single-portion sizes.
French-style ice cream: Ice cream containing egg yolks.
Fresh yeast: See Compressed yeast.
Fritter: A deep-fried item made of or coated with a batter or dough.
Frozen mousse: A still-frozen dessert containing whipped cream.
Frozen soufflé: A frozen mousse served in a soufflé dish or ramekin so that it resembles a baked soufflé.
Frozen yogurt: A frozen dessert similar to ice cream but made with yogurt instead of or in addition to milk.
Fruitcake: A loaf cake containing a high percentage of dried and candled fruits and, usually, nuts.
Fruit gratin: A dessert consisting of fruit plus a topping, browned under a broiler.
Fruit pie: A baked single- or double-crust pie with a fruit filling.
Fruit torte: A layer cake topped with a decorative arrangement of fruit.
Fungus: A class of organisms that includes yeasts, molds, and mushrooms.
Fusion cuisine: The use of techniques and ingredients from more than one regional cuisine in a single dish.
Ganache: A rich cream made of sweet chocolate and heavy cream.
Garnish: An edible item added to another food as a decoration or accompaniment.
Gateau: French word for "cake."
Gateau St-Honore: A pastry consisting of a base made of short pastry and pate a choux and a cream filling, usually crème Chiboust or crème diplomat.
Gaufre: French for "waffle."
Gelatin: A water-soluble protein extracted from animal tissue; used as a jelling agent.
Gelatinization: The process by which starch granules absorb water and swell in size.
Gelato: Italian ice cream.
Gelee: (1) A liquid thickened with gelatin. (2) Any other kind of jelly, especially one set with pectin.
Genoise: A sponge cake made by whipping whole eggs with sugar and

folding in flour and, sometimes, melted butter.
Germ: The plant embryo portion of a grain kernel.
Gladi: (l) Glazed; coated with icing; (2) frozen.
Glacier: A chef whose specialty is ice cream.
Glace: (1) n. A shiny coating, such as a syrup, applied to a food. (2) v. To make a food shiny or glossy by coating it with a glaze or by browning it under a broiler or in a hot oven.
Gtiadin: A protein in wheat flour that combines with another protein, glutenin, to form gluten.
Glucose: A simple sugar available in the form of a clear, colorless, tasteless syrup.
Gluten: An elastic substance formed from proteins present in wheat flours that gives structure and strength to baked goods.
Glutenin: See Gliadin.
Gluten window: A thin membrane of yeast dough made in order to test gluten development.
Gram: The basic unit of weight in the metric system; equal to about one- thirtieth of an ounce.
Granita: Italian equivalent of the French term Granite.
Granite: A coarse, crystalline frozen dessert made of water, sugar, and fruit juice or another flavoring.
Granulated sugar: Sucrose in a fine crystalline form.
Gum paste: A type of sugar paste or pastillage made with vegetable gum.
HACCP: Hazard Analysis Critical Control Points. HACCP is a food safety system of self-inspection designed to highlight hazardous foods and to ensure proper food handling, by identifying, monitoring, and control- ling dangers of food contamination.
Half-and-half: A kind of high-fat milk or low-fat cream containing 10 to 18% milk fat.
Hard meringue: A meringue baked until crisp.
Hard sauce: A flavored mixture of confectioners' sugar and butter; often served with steamed puddings.
Hard wheat: Wheat high in protein.
Hazard: A potentially dangerous food condition caused by contamination, growth of pathogens, survival of pathogens, or presence of toxins.
Head baker: The professional in charge of staff and production in a bakery.
Hearth bread: A bread baked directly on the bottom of the oven, not in a pan.
Heavy pack: A type of canned fruit or vegetable with very little added water or juice.
High-fat cake: A cake with a high percentage of fat; distinguished from a sponge or egg-foam cake.
High-ratio method: See Two-stage method.
High-ratio: (1) Term referring to cakes and cake formulas mixed by a special method and containing more sugar than flour. (2) The mixing method used for these cakes. {3) Term referring to certain specially formulated ingredients used in these cakes, such as shortening.
Homogenized milk: Milk processed so the cream does not separate out.
Hot milk and butter sponge: A sponge cake batter in which a mixture of warm milk and melted butter is mixed into the batter.
Hydration: The process of absorbing water.
Hydrogenation: A process that converts liquid oils to solid fats (shortenings) by chemically bonding hydrogen to the fat molecules.
Ice cream: A churn-frozen mixture of milk, cream, sugar, flavorings, and, sometimes, eggs.
Ice milk: A frozen dessert similar to ice cream, but with a lower fat content.

Icebox: A cookie makeup method in which the dough is shaped into cylinders, refrigerated until firm, and then sliced.
Ice: A frozen dessert made of water, sugar, and fruit juice.
Icing comb: A plastic triangle with toothed or serrated edges; used for texturing icings.
Icing screen: A screen on which cakes a reset when iced or glazed, allowing excess to run off.
Improved mix: A yeast dough mixing technique that combines a medium mixing period with a medium fermentation period.
Initial development stage: The first part of the development stage of mixing yeast doughs, in which the dough still appears rough and under-mixed.
Instant dry yeast: A dry, granular yeast product that does not require hydration before being added to doughs.
Instant starch: A starch that thickens a liquid without cooking because it has been precooked.
Intensive mix: A yeast dough mixing technique that combines a long mixing period with a short fermentation period.
Inversion: A chemical process in which a double sugar splits into two simple sugars,
Invert sugar: A mixture of two simple sugars, dextrose and sucralose, resulting from the breakdown of sucrose.
Isomalt: A compound derived from sucrose, used as a dietary sugar substitute and as an alternative to sugar in decorative sugar work.
Italian meringue: A meringue made by whipping a boiling syrup into egg whites.
Jalebi: A type of Indian dessert made of deep-fried batter soaked in syrup.
Japona: A baked meringue flavored with nuts.
Kernel paste: A nut paste, similar to almond paste, made of apricot kernels and sugar.
Kilo-: Prefix in the metric system meaning one thousand.
Kirsch: A clear alcoholic beverage distilled from cherries.
Kirsch torte: A torte made of genoise, meringue disks, and buttercream, and flavored with kirsch.
Kugehopf: A type of rich, sweet bread or coffee cake, usually made in a tube-type pan.
Lactobacilli: A group of bacteria primarily responsible for producing the acidity in sourdough starters.
lacto-ovo-vegetarian: A vegetarian diet that allows dairy products and eggs.
lactose: A form of sugar naturally present in milk.
Lacto-vegetarian: A vegetarian diet that allows milk and other dairy products.
Ladyfinger: A small, dry, finger-shaped sponge cake or cookie.
Lag phase: A period after bacteria have been introduced to a new environment and before they begin to grow and reproduce.
Laminated dough: A dough consisting of many alternating layers of dough and butter or other fat.
Langue de chat: A thin, crisp cookie. The French name means "cat's tongue," referring to the shape of the cookie.
Lattice crust: A top crust for a pie made of strips of pastry in a crisscross pattern.
Lean dough: A dough low in fat and sugar.
Leavening: The production or incorporation of gases in a baked product to increase volume and to produce shape and texture.
Lecithin: An emulsifier usually derived from soybeans. Leva in: Sourdough starter.
Levain-levure: French for yeast pre-ferment.

Levure: Commercial yeast.
Light cream: Cream with a fat content of 18 to 30%.
Linzertorte: A tart made of raspberry jam and a short dough containing nuts and spices.
Lipid: Any of a group of compounds containing fats and cholesterol.
Liquid levain: A thin or batter-like sourdough starter.
Liter: The basic unit of volume in the metric system; equal to slightly more than one quart.
Long-fermentation dough: A yeast dough that requires a long fermentation period.
Low-fat milk: Milk with a fat content of 0.5 to 2%.
Macaron: French spelling for macaroon, usually referring to a particular style of almond-paste cookie.
Macaroon: A cookie made of eggs (usually whites) and almond powder, almond paste, or coconut.
Maillard reaction: A chemical reaction that causes the browning of proteins and sugars together when subjected to heat.
Malt syrup: A type of syrup containing maltose sugar, extracted from sprouted barley.
Marble: To partly mix two colors of cake batter or icing so the colors are in decorative swirls.
Margarine: An artificial butter product made of hydrogenated fats and flavorings.
Marron: French for "chestnut."
Marshmallow: A light confection, icing, or filling made of meringue and gelatin (or other stabilizers).
Marshmallow icing: Boiled icing with the addition of gelatin.
Marzipan: A paste or confection made of almonds and sugar and often used for decorative work.
Mature (dough): The ideal stage of development for a yeast dough.
Mature (fruit): Fruit that has completed its development and is physiologically capable of continuing the ripening process, even after removal from the plant.
Maza: An early type of bread; cakes of grain paste baked by the ancient Greeks.
Meal: Coarsely ground grain.
Mealy piecrust: A piecrust in which the fat has been mixed in thoroughly enough so the dough does not have a flaky texture.
Mealy pie dough: A pie dough that has a mealy texture when baked. See Mealy piecrust.
Melba sauce: A sweet sauce made of pureed raspberries and, sometimes, red currants.
Meringue: A thick, white foam made of whipped egg whites and sugar.
Meringue Chantilly: Baked meringue filled with whipped cream.
Meringue glacee: Baked meringue filled with ice cream.
Heter: The basic unit of length in the metric system; slightly longer than 1 yard. Metric system: A measurement system based entirely on decimals.
Microorganism: A life form, such as bacteria, too small to be seen without a microscope.
Milk chocolate: Sweetened chocolate containing milk solids.
Milk chocolate couverture: Couverture consisting of chocolate liquor, sugar, and milk solids.
Milk fat: The fat content of milk; also called butterfat.
Millefeuille: French term for napoleon; literally, "thousand leaves." Also used for various layered desserts.
Milli-: Prefix in the metric system meaning one-thousandth.
Mineral: An inorganic element, such as calcium, iron, potassium, sodium, or zinc, that is essential to nutrition.

Mixed fermentation: A type of yeast dough fermentation utilizing both a pre-ferment or sour starter and a commercial yeast.
Modeling chocolate: A thick paste made of chocolate and glucose that can be molded by hand into decorative shapes.
Modified straight dough method: A mixing method similar to the straight dough method, except the fat and sugar are mixed together first to ensure uniform distribution. Used for rich doughs.
Molasses: A heavy brown syrup made from sugarcane.
Molded: A cookie makeup method in which the dough is shaped into cylinders, cut into equal portions, and shaped as desired.
Monosaccharide: A simple or single sugar such as glucose and fructose. Monounsaturated fat: A type of fat, normally liquid at room temperature, that contains one double bond in its carbon chain.
Mousse: A soft or creamy dessert made light by the addition of whipped cream, egg whites, or both.
Muffin method: A mixing method in which the mixed dry ingredients are combined with the mixed liquid ingredients.
Napoleon: A dessert made of layers of puff pastry filled with pastry cream.
Natural sour: See Sourdough starter.
Natural starter: See Sourdough starter.
Net weight: The weight of the total contents of a can or package.
Nonfat milk: Milk with all the fat removed.
Nonfat dried milk: Fat-free milk with all the moisture removed.
No-time dough: A bread dough made with a large quantity of yeast and given no fermentation time, except for a short rest after mixing.
Nougatine: A mixture of caramelized sugar and almonds or other nuts, used in decorative work and as a confection and flavoring.
Nouvelle cuisine: Important cooking style of the 1960s and 1970s, known for lighter flavors and elaborate plating styles.
Nutrient: A substance essential for the functioning or growth of an organism.
Nutrient density: The quantity of nutrients per calorie. Oil: A liquid fat.
Old dough: A dough that is over fermented.
One-stage method: {l) a cookie-mixing method in which all ingredients are added to the bowl at once. (2) A cake-mixing method in which all the ingredients, including high-ratio liquid shortening, are mixed together at once.
Opera cake: A layer cake made of thin sponge layers, coffee-flavored buttercream, and chocolate ganache.
Opson: In ancient Greece, any food eaten with bread.
Osmotolerant yeast: A type of yeast that can remain active even in a high concentration of sugar. Used for sweet doughs.
Outlining: Drawing shapes on a plate with chocolate or a thick sauce prior to filling in the spaces in those shapes with one or more sauces,
Oven spring: The rapid rise of yeast goods in the oven due to the production and expansion of trapped gases caused by the oven heat.
Overrun: The increase in volume of ice cream or frozen desserts caused by
the incorporation of air while freezing.

Ova-vegetarian: Referring to a vegetarian diet that allows eggs.
Oxidation: The process that occurs when oxygen reacts with other com- pounds or elements. In the bakeshop, it usually refers to oxidation of components of flour during mixing.
Pain d'epice: French for "spice bread." A type of
gingerbread.
Pain de campagne: French country-style bread.
Palmier: A small pastry or petit four sec made of rolled, sugared puff pastry cut into slices and baked.
Panettone: An Italian sweet bread made in a large [oaf, generally containing dried and candied fruits.
Panna cotta: An Italian pudding made of cream, gelatin, and flavorings; literally, "cooked cream."
Paper cone: A tool made of parchment paper formed into a cone and filled with icing, sauce, or other semi-liquid. Used for decorative work.
Parasite: An organism that can survive only by living on, with, or inside another organism,
Parfait: (1) A type of sundae served in a tall, thin glass. {2) A still-frozen dessert made of egg yolks, syrup, and heavy cream.
Pads-Brest: A dessert consisting of a ring of baked eclair paste filled with cream.
Pasteurize: To heat-treat substances, such as milk, to kill bacteria that might cause disease or spoilage.
Pastillage: A sugar paste used for decorative work, which becomes very hard when dry.
Pastry cream: A thick custard sauce containing eggs and starch. Pastry flour: A weak flour used for pastries and cookies.
Pastry method: A mixing method in which the fat is mixed with the dry
ingredients before the liquid ingredients are added. Also called Biscuit method.
Pate a choux: Eclair paste.
Pate brisee: A type of rich pastry dough used primarily for tarts.
Pate fermentee: Fermented dough, used as a starter for yeast breads.
Pate feuillete: French name for puff pastry.
Pate sabtee: A rich, crumbly pastry dough high in fat. Also called short
dough.
Pate sucree: A type of pastry dough similar to pate brisee but higher in sugar.
Patent flour: A fine grade of wheat flour milled from the inner portions of the kernel.
Pathogen: A disease-causing microorganism.
Patissier: A pastry chef.
Peasant tart: A baked tart with a custard filling containing prunes.
Pectin: A soluble plant fiber, used primarily as a jelling agent for fruit pre- serves and jams.
Peel: A flat wooden shovel used to place hearth breads in an oven and to remove them.
Pentosan: A category of carbohydrate gums present in wheat flour and having strong water absorption capability.
Petit four: A delicate cake, pastry, cookie, or confection small enough to be eaten in one or two bites.
Petit four glace: An iced or cream-filled petit four.
Petit four sec: An un-iced or unfilled petit four (sec means "dry"), such as a small butter cookie or palmier.

pH: A measure of the acidity or alkalinity of a substance.
Philadelphia-style ice cream: Ice cream containing no eggs.
Phyllo dough: A paper-thin dough or pastry used to make strudels and various Middle Eastern and Greek desserts. Also spelled fiio or filo.
Pickup stage: The first stage of yeast dough mixing, in which the loose dry ingredients are gradually picked up and incorporated into the developing dough.
Piping jelly: A transparent, sweet jelly used for decorating cakes.
Pithiviers: A cake made of puff pastry filled with almond cream.
Plant toxin: Any poison naturally present in plants.
Poissonier: The station chef in charge of fish preparation.
Polyunsaturated fat: A type of fat, normally liquid at room temperature that contains more than one double bond in its carbon chain.
Poolish: A thin yeast starter made with equal parts flour and water, plus commercial yeast.
Pot de crème: A rich baked custard.
Pound cake: (1) A cake made of equal weights of flour, butter, sugar, and eggs; {2) any cake resembling this.
Pour batter: A batter thin or liquid enough to pour. See also Drop batter. Poured fondant: See Fondant.
Poured sugar: Sugar boiled to the hard-crack stage and then poured into molds to harden. Also called cast sugar.
Praline: A confection or flavoring made of nuts and caramelized sugar.
Pre-ferment: A fermented dough or batter used to provide leavening for a larger batch of dough.
Press: A scaled piece of dough divided into small, equal units in a dough divider.
Profiterole: A small puff made of eclair paste. Often filled with ice cream and served with chocolate sauce.
Proofing: Fermenting made-up yeast products to increase their volume and lighten their texture before baking.
Protein: Any of a group of nutrients essential for growth, building body tissue, and basic body functions, and that can also be used for energy if the diet does not contain enough carbohydrates and fats.
Puff pastry: A very light, flaky pastry made from a rolled-in dough and leavened by steam.
Pulled sugar: Sugar boiled to the hard-crack stage, allowed to harden slightly, then pulled or stretched until it develops a pearly sheen.
Pullman loaf: A long, rectangular loaf of bread,
Pumpernickel flour: A coarse, flaky meal made from whole rye grains.
Punching: A method of expelling gases from fermented dough.
Puree: A food made into a smooth pulp, usually by being ground or forced
through a sieve.
Quenelle: A small oval portion of food.
Recipe: A set of instructions, including ingredients and quantities, for pre- paring a certain dish. See also Formula.
Regular shortening: Any basic shortening without emulsifiers, used for creaming methods and for icings.
Retarder-proofer: An automated, timer-controlled combination of retarder/

freezer and proofer, used for holding and proofing yeast products.
Retarding: Refrigerating a yeast dough to slow its fermentation.
Reversed puff pastry: A type of puff pastry made with the dough enclosed between layers of butter.
Ribbon sponge: A thin sponge cake layer with a decorative design made of stencil paste.
Rice conde: A thick, molded rice pudding, usually topped with fruit.
Rice imperatrice: A rich rice pudding containing whipped cream, candied fruits, and gelatin.
Rich dough: A dough high in fat, sugar, and/or eggs.
Ripe (fruit): Fruit that is at its peak of texture, flavor, and sweetness, and ready to be consumed.
Rotted: A cookie makeup method in which the dough is rolled out into a sheet and cut into shapes with cookie cutters.
Rolled fondant: A dough-like sugar product with the texture of a stiff dough. Rolled into thin sheets and used to cover cakes.
Rolled-in dough: Dough in which a fat has been incorporated in many layers using a rolling and folding procedure.
Roller milting: A process of milling wheat into flour that involves repeatedly cracking and sifting the grain.
Rotisseur: Roast cook or meat cook.
Rounding: A method of molding a piece of dough into a round ball with a smooth surface or skin.
Royal icing: A form of icing made of confectioners' sugar and egg whites; used for decorating.
Rye blend: A mixture of rye flour and hard wheat flour. Rye flour: Rye grain milled into a flour.
Rye meal: Coarse rye flour,
Sabayon: A foamy dessert or sauce made of egg yolks whipped with wine or liqueur.
Sablage: See Sanding method.
Sachertorte: A rich chocolate cake from Vienna.
Sacristain: A small pastry made of a twisted strip of puff paste coated with nuts and sugar.
Sanding method: A pastry- and cookie-mixing method involving blending the fat with the dry ingredients and then adding in egg.
Saturated fat: A fat that is normally solid at room temperature.
Saucier: The station chef who prepares sauces and stews and sautés foods to order.
Savarin: A type of yeast bread or cake soaked in syrup. Scaling: Weighing, usual(y ingredients, doughs, or batters. Scone: A type of biscuit or biscuit-like bread.
Scone flour: A mixture of flour and baking powder used when very small quantities of baking powder are needed.
Seeding: A technique for tempering chocolate by adding grated tempered chocolate to melted chocolate to cool it.
Self-rising flour: White flour to which baking powder and, sometimes, salt has been added.
Sfogliatelte: A southern Italian flaky turnover pastry with a sweet cheese filling.
Sheet: A cookie makeup method in which the dough is baked in sheets and then cut into portions.
Sherbet: A frozen dessert made of water, sugar, fruit juice, and, some- times, milk or cream.
Short: Having a high fat content, which makes the product (such as a cookie or pastry) very crumbly and tender.
Shortbread: A crisp cookie made of butter, sugar, and flour.

Short dough: A pastry dough, similar to a basic cookie dough, made of flour, sugar, and fat. See also Short.
Shortening: (1) Any fat used in baking to tenderize the product by shortening gluten strands. (2) A white, tasteless, solid fat formulated for baking or deep-frying.
Short-fermentation straight dough: A yeast dough, usually with a high percentage of yeast, that is fermented for only a short time before being made up and baked.
Short mix: A yeast dough mixing technique combining a short mixing period with long fermentation.
Simple fold: One part of the procedure for making Danish and croissant dough, which requires folding the dough in thirds. Also called three-fold.
Simple presentation: A style of plating a dessert consisting of a portion of one dessert plus optional sauces and garnishes.
Simple sugar: A sugar with the simplest or smallest possible molecule, containing 6 carbon atoms. Glucose is a simple sugar.
Simple syrup: A syrup consisting of sucrose and water in varying proportions.
Single-acting baking powder: Baking powder that releases gases as soon as it is mixed with water.
Skim milk: Milk with all the fat removed.
Sodium bicarbonate: Baking soda; a chemical that releases carbon dioxide gas when combined with an acid.
Soft meringue: The type of meringue traditionally used for pie toppings; usually with a tow percentage of sugar.
Soft pie: A single-crust pie with a custard-type filling-that is, a filling that sets or coagulates due to its egg content.
Soft wheat: Wheat low in protein.
Solid pack: A type of canned fruit or vegetable with no water added.
Sorbet: French for "sherbet."
Sorbetto: Italian for "sherbet."
Scuffle: (1) A baked dish containing whipped egg whites, which cause the dish to rise during baking. (2) A still-frozen dessert made in a scuffle dish so it resembles a baked scuffle.
Sour: Sourdough starter.
Sour cream: A cream, usually with about 18% milk fat, that has been fermented by bacteria until thick.
Sourdough: A dough leavened by a sourdough starter.
Sourdough starter: A dough or batter that contains wild yeasts and bacteria, has a noticeable acidity as a result of fermentation by these organisms, and is used to leaven other doughs.
Sous chef: The station chef who assists the executive chef and is directly in charge of the cooking during production.
Sponge: A batter or dough of yeast, flour, and water that is allowed to ferment and is then mixed with more flour and other ingredients to make a bread dough.
Sponge cake: A type of cake made by whipping eggs and sugar to a foam, then folding in flour.
Sponge method: A cake- and cookie-mixing method based on whipped eggs and sugar.
Sponge roll: See Swiss roll.
Spread: The tendency of a cookie to expand and flatten out when baked.

Spun sugar: Boiled sugar made into long, thin threads by dipping wires into the sugar syrup and waving them so the sugar falls off in fine streams.
Staling: The change in texture and aroma of baked goods due to the loss of moisture by the starch granules.
Standardized formula: A set of instructions describing the way a particular establishment prepares a certain baked item.
Starch retrogradation: A chemical change of starch molecules that is responsible for staling.
Stencil: A pattern or design cut from plastic or cardboard, used for depositing batter for thin cookies made in decorative shapes.
Stencil paste: A type of thin cookie or wafer dough used to make cookies in decorative shapes; also used to make decorative patterns in ribbon sponge.
St. Honore: (1) A dessert made of a ring of cream puffs set on a short dough base and filled with a type of pastry cream; (2) the cream used to fill this dessert, made of pastry cream and whipped egg whites.
Stirred custard: A custard stirred while it is cooked so it thickens but does not set.
Stollen: A type of sweet yeast bread with fruit.
Straight dough method: A mixing method for yeast goods in which all ingredients are mixed together at once.
Straight flour: Flour made from the entire wheat kernel minus the bran and germ.
Stream: The portion of flour that is separated in any one of the stages in the roller-milling of grain.
Streusel: A crumbly topping for baked goods, consisting of fat, sugar, and flour rubbed together.
String work: The production of decorative icing designs using a paper cone; see drop-string method.
Strong flour: Flour with a high protein content.
Strudel: A baked item consisting of a filling rolled up in a sheet of strudel dough or phyllo dough.
Strudel dough: A type of dough that is stretched until paper-thin. Sucralose: A type of synthetic sweetener derived from sucrose.
Sucrose: The chemical name for regular granulated sugar and confectioners' sugar.
Sugar cage: A lacy dome of hard or caramelized sugar.
Sundae: A dessert consisting of ice cream in a dish, with various sauces and toppings.
Swiss meringue: Egg whites and sugar warmed, usually over hot water, and then whipped to a foam.
Swiss roll: A thin sponge cake layer spread with a filling and rolled up.
Syrup: One or more types of sugar dissolved in water, often with small amounts of other compounds or impurities that give the syrup flavor.
Syrup pack: A type of canned fruit containing sugar syrup.
Tablage: A technique for tempering chocolate by cooling it on a marble slab. Tart: A flat, baked item consisting of a pastry and a sweet or savory topping or filling; similar to a pie but usually thinner.
Tarte Tatin: An upside-down apple tart.
Tempering: The process of melting and cooling chocolate to a specific temperature to prepare it for dipping, coating, or molding.
Tenacity: The resistance of a dough to being stretched.

Three-fold: A technique used to increase the number of layers in puff pas- try or Danish pastry by folding the dough in thirds.
Tiramisu: An Italian dessert made of ladyfinger sponge, flavored with espresso coffee and a creamy cheese filling.
Torte: German for various types of cakes, usually layer cakes.
Trans fat: A solid fat, usually manufactured by hydrogenation, which limits the body's ability to rid itself of cholesterol.
Tullie: A thin, crisp cookie molded into a cup shape.
Tunneling: A condition of muffin products characterized by large, elongated holes; caused by overmixing.
Turntable: A pedestal with a flat, rotating top, used for holding cakes while they are being decorated.
Two-stage method: A cake-mixing method that begins with the blending of flour and high-ratio shortening and is followed by the addition of liquids. Also called the high-ratio method.
UHT pasteurization: Ultra Heat Treated or Ultra High Temperature pasteurization. Subjection to a relatively high heat for a defined period in order to kill microorganisms and extend shelf life.
Ultra pasteurized: See UHT pasteurization.
Unsaturated fat: A fat that is normally liquid at room temperature.
Vacherin: A crisp meringue shell filled with cream, fruits, or other items.
Vegan: A vegetarian diet that excludes all animal products, including dairy products and eggs.
Virus: An extremely small microorganism, smaller than bacteria, responsible for a variety of diseases.
Vital wheat gluten: Wheat gluten in a concentrated form, usually about 75% by weight, added to flour to improve the quality of yeast-raised doughs.
Vitamin: Any of a group of compounds that are present in foods in very small quantities and are necessary for regulating body functions.
Wash: (1) n. A liquid brushed onto the surface of a product, usually before baking. (2) v. To apply such a liquid.
Water hardness: The mineral content of water.
Water pack: A type of canned fruit or vegetable containing the water used to process the item.
Weak flour: Flour with a low protein content.
Whipping cream: Cream with a high enough fat content, usually above 30%, to enable it to be whipped into a foam.
White couverture: A confection consisting of cocoa butter, milk solids, and sugar. Sometimes erroneously called white chocolate.
Whole milk: Milk with 3.5% fat content.
Whole-wheat flour: Flour made by grinding the entire wheat kernel, including the bran and germ.
Yeast pre-ferment: A dough or batter fermented with commercial yeast and used to provide leavening for a larger batch of dough.
Yeast starter: Another name for yeast pre-ferment.
Yogurt: Milk cultured with special bacteria until thick. Young dough: A dough that is under fermented.
Zabaglione: An Italian dessert or sauce made of whipped egg yolks and Marsala wine.
Zest: The colored outer portion of the peel of citrus fruits.

Appendix

KITCHEN WEIGHT AND MEASURES

1 pinch = 1/8 teaspoon
3 teaspoons = 1 tablespoon (teaspoon – tsp / Tablespoon = tbsp.)
2 tablespoons = **1** ounce
1 cup = **8** ounces / 16 tbsp.
¾ cup = 6 ounces / 12 tbsp.
½ cup = 4 ounces / 8 tbsp.
¼ cup = 2 ounces / 4 tbsp.
16 ounces = 1 pound
2 cups = 1 pint / 16 oz.
4 cups = 1 quart / 32 oz.
16 cups = 1 gallon / 128 oz.
2 quarts = ½ gallon / 64 oz.
4 quarts = 1 gallon

METRIC CONVERSIONS

1 gram	= 0.03527 oz.
1 kilogram	= 2.2 pounds
28.35 grams	= 1 ounce / 2 tbsp.
453.6 g.	= 1 pound
5 milliliters	= 1 teaspoon
15 milliliters	= 1 tablespoon
240 milliliters	= 1 cup
0.4732 liters	= 1 pint
0.951 liters	= 1 quart
1 liter	= 1.06 quarts

FOOD QUANTITY NEEDED

(1) Number to be served X portions size = number of ounces needed
Number of ounces needed / 16 (ounces per pound) = pounds needed

EXAMPLE: 25 hamburgers, 8 oz. each. SO…. 8 oz. X 25 = 200 ounces needed. So….200oz. / 16oz (1 lb.) = 12.5 pounds of hamburger needed.

RECIPE CONVERSION

Must know: (1) number of servings – recipe yield, and (2) # of servings needed.

- **More servings than the recipe** - recipe yield divided into number of servings needed is the amount needed.
- **Less servings needed than the recipe yields** - divide number of servings needed divided by recipe yield is the percentage to reduce the recipe by.

EXAMPLES:
(1) Recipe yields 6 servings – you need 24 servings SO… 24 / 6 = 4 times the recipe amounts.

(2) Recipe yields 24 servings and you need 6 servings So…. 6 servings / 24 servings = 25% of recipe ingredients. Or – 6/6 = 1 24/6 = 4 = ratio 1 to 4 or 25%

Measurement and conversion charts

Formulas for Exact measurement

	WHEN YOU KNOW:	MULTIPLY BY:	TO FIND:
Mass (weight)	Ounces	28.35	grams
	Pounds	0.45	kilograms
	Grams	0.035	ounces
	Kilograms	2.2	pounds
Volume (capacity)	teaspoons	5.0	milliliters
	tablespoons	15.0	milliliters
	fluid ounces	29.57	milliliters
	cups	0.24	liters
	pints	0.47	liters
	quarts	0.95	liters
	gallons	3.785	liters
	milliliters	0.034	fluid ounces
Temperature	Fahrenheit	5/9 (after subtracting 32)	Celsius
	Celsius	9/5 (then add 32)	Fahrenheit

Rounded Measurement for Quick Reference

1 oz.		= 30 g
4 oz.		= 120 g
8 oz.		= 240 g
16 oz.	= 1 lb.	= 480 g
32 oz.	= 2 lb.	= 960 g
36 oz.	= 2¼ lb.	= 1000 g (1 kg)
1/4 tsp.	= 1/24 fl. oz.	= 1 ml
½ tsp.	= 1/12 fl. oz.	= 2 ml
1 tsp.	= 1/6 fl. oz.	= 5 ml
1 Tbsp.	= 1/2 fl. oz.	= 15 ml
1 C.	= 8 fl. oz.	= 240 ml
2 c. (1 pt.)	= 16 fl. oz.	= 480 ml
4 c. (1 qt.)	= 32 fl. oz.	= 960 ml
4 qt. (1 gal.)	= 128 fl. oz.	= 3.75 It
32°F		= 0°c
122°F		= 50°c
212°F		= 100°c

Conversion Guidelines

1 gallon	4 quarts
	8 pints
	16 cups (8 fluid ounces)
	128 fluid ounces
1 fifth bottle	approximately 1 ½ pints or exactly 26.5 fluid ounces

1 measuring cup	8 fluid ounces (a coffee cup generally holds 6 fluid ounces)
1 large egg white	1 ounce (average)
1 lemon	1 to 1 ¼ fluid ounces of juice
1 orange	3 to 3½ fluid ounces of juice

Scoop Sizes

Scoop Number	*Level Measure*
6	2/3 cup
8	1/2 cup
10	2/5 cup
12	1/3 cup
16	1/4 cup
20	3 1/5 tablespoons
24	2 2/3 tablespoons
30	2 1/5 tablespoons
40	1 3/5 tablespoons

The number of the scoop determines the number of servings in each quart of a mixture: for example, with a No. 16 scoop, one quart of mixture will yield 16 servings.

Ladle Sizes

Size	*Portion of a Cup*	*Number per Quart*	*Number per Liter*
1 fl. oz.	1/8	32	34
2 fl. oz.	l/4	16	17
2 2/3 fl. oz.	l/3	12	13
4 fl. oz.	1/2	8	8.6
6 fl. oz.	3/4	5 1/3	5.7

Canned Goods

SIZE	**NO. OF CANS PER CASE**	**AVERAGE WEIGHT**	**AVERAGE NO. CUPS PER CAN**
No.¼	1 & 2 doz.	4 oz.	1/2
No.½	8	8 oz.	1
No. 300	1 & 2 doz.	14 oz.	1 3/4
No. 1 tall (also known as 303)	2 & 4 doz.	16 oz.	2
No. 2	2 doz.	20 oz.	2 1/2
No. 2½	2 doz.	28 oz.	3 1/2
No.3	2 doz.	33 oz.	4
No. 3 cylinder	1 doz.	46 oz.	5 2/3
No. 5	**1** doz.	3 lb. 8 oz.	5 1/2
No. 10	6	6 lb. 10 oz.	13

Cake Terms - Icing, Decorating, and Accessories

What's the difference between buttercream and fondant and ganache? Petal dust? Getting started with baking can be tough when you don't understand all the baking lingo so here's 42 common cake icings, cake decorating and cake accessory terms.

Cake Icings

Buttercream - Smooth and creamy decorator icing (referred to as frosting). It can be made in different consistencies – firm for flower decor, medium for borders and thin for icing or writing letters and words on cakes. It is easily colored or flavored. It melts in extreme heat and is not recommended for hot venues.

Fondant - A type of icing made of corn syrup, sugar and gelatin. It comes in many different colors, has a sweet flavor and is smooth and stiff. It can be rolled out and spread over cakes. Most cakes have a layer of buttercream or ganache underneath the fondant to keep it pliable. Fondant can also be used for sculpted decorations or patterns on cakes. It looks best decorated with marzipan fruits, ribbon or gum paste flowers. It does not need refrigeration.

Royal Icing - Typically a mixture of meringue powder, powdered sugar, & water. It is shiny, hard and does not need to be refrigerated. It is used for latticework and decorations.

Ganache - A type of chocolate with a consistency similar to store bought icing. Very rich, it is created when hot cream is poured over sweet chocolate, which is then beaten until glossy and smooth. It can be poured over cakes for a glass-like finish or used as filling. It is not suitable for hot or humid weather.

Whipped Cream - Made from sugar and heavy cream and whipped to the desired consistency. Whipped cream can be a topping or a filling, but must be kept refrigerated and brought out right before the cake cutting.

Marzipan - A paste made of almonds, sugar and egg whites. It can be used as icing or molded into decorations including flowers or fruits.

Cake Decorations

Gum Paste - Created with gelatin, cornstarch and sugar. It is used for sculpted figurines or decor on cakes. It is edible, but becomes very hard when dried.

Piping - A decorative technique achieved by using a decorator bag and metal tip. Patterns, swirls, lettering and other decor can be 'piped' onto cakes. It is ideal for dots, basketweave, latticework and shells.

Pulled Sugar - Boiled sugar, water and corn syrup that is molded into designs including roses and bows.

Dragees - Hard sugar balls painted with silver or gold paint.

Floral Wire - Non-edible decorative wire used to make 3-D decor on cakes.

Gold Leaf - Edible 24 carat gold decoration used as decorative element on cakes.

Edible Images - Using edible ink and edible frosting paper, any type of image can be imprinted on cakes.

Pearls - An edible decoration for cakes that are made to look like real pearls. They are available in different colors, sizes and taste like hard candy.

Sugar Flowers - Used in the place of fresh flowers, usually hand created from a sugar syrup that hardens.

Cake Decorative Techniques

Airbrushing - Using a small air pump to spray food coloring onto the cake.

Basketweave - Pattern made on cakes in a crosshatch pattern giving the cake the appearance of an actual basket. This can be achieved with fondant or buttercream.

Chevron - A pattern involving different colored 'V' shapes in repetition, usually created on cakes with fondant.

Damask - A pattern for cakes commonly found on silk textiles. They are usually botanical patterns but can be geometric or animals.

Cornelli - A delicate design that's created by using an elaborate piping technique to produce a lacelike pattern.

Hand-painted - A decorative technique used on cakes and desserts involving food coloring and paint brushes. The patterns are painted by hand onto the cake to add fine details with brush strokes.

Houndstooth (dogstooth or dogtooth) - A pattern characterized by a series of broken check marks or four-pointed shapes.

Marble - When flavors or colors are "swirled" together to create a "swimming" effect. Often used in cake interiors or with fondant.

Ombre - When tones of color blend into each other, usually graduating from light to dark.

Quatrefoil - A pattern created using four leaves or lobes, resembling a four-leafed clover or a flower.

Ruffles - A design style on cakes made to look like real ruffles using fondant.

Swiss Dots - A pattern created by piping on small, "pearl" dots. Designed to resemble the Swiss dot pattern commonly found on bridal gowns or veils.

Petal dust - Adds sparkle or sheen to a cake.

Cake Accessories

Cake Board - A cardboard piece available in various shapes and sizes and used as a base for cakes. Not edible but can be covered in edible decorations.

Cupcake Stand/ Cupcake Tower - Sometimes used as an alternative to cakes, a cupcake stand or tree features cupcakes on tiered layers. They can be rented for events in different sizes and hold varying amounts of cupcakes.

Pillars - Separators used in a tiered cake. They can be made of plastic or wood in several lengths to achieve the desired look.

Backdrop - Fabric or paper background that is either draped or hung smoothly and used to highlight a wedding cake setting for taking professional pictures.

Cake Circle - Corrugated cardboard rounds sized to provide bases for standard circular cakes. They can be purchased, waxed, unwaxed, patterned or with ruffles.

Side Decoration - Icing decorations used around the sides of a cake such as strings or garland.

Tier Separators - Constructed supports that separate stacked cakes.

Cake Stand - A plate on a pedestal used for displaying cakes.

Wedding Cake Fountain - Independent water fountain of various levels, some are lighted. Usually placed within the levels of a cake.

Cake Topper - Ornaments on the top of the wedding cake.

Wedding Cake Bridges/Stairs - Ornamental bridges or stairs that connect layers of wedding cake or separate cakes.

Alternative Cakes

Miniatures - Individually decorated wedding cakes served to each guests.

Groom's Cake - A cake that was traditionally richer than the bride's, with the addition of flavors like chocolate and fruit. Groom's cakes are served at the wedding reception but can also be served at the wedding ceremony. It is usually considered proper for the groom's cake to be served separately from the bride's. Many are decorated to reflect the groom's hobbies, such as golfing, fishing, or hunting.

Cupcake - A small cake baked in a cup-shaped container and typically iced.

PROFESSIONAL ASSOCIATIONS

American Culinary Association (ACF), www.acfchefs.org
American Dietetic Association (ADA), www.eatright.org
American Hotel and Lodging Association (AHLA), www.ahla.org
American Institute of Baking (AIB), www.aibonline.org
American Institute of Wine and Food (AIWF), www.aiwf.org
American Personal Chef Association (APCA), www.personalchef.com
American Society for Healthcare Food Service Administrators (ASHFSA), www.ashfsa.org
Black Culinarian Alliance (BCA), www.blackculinarians.com
Bread Bakers Guild of America, www.bbga.org
Club Managers Association of America (CMAA), www.cmaa.org
Confrerie de la Chaine des Rotisseurs, www.chaineus.org
Dietary Managers Association (DMA), www.dmaonline.org
Foodservice Consultants Society International (FCSI), www.fcsi.org
Foodservice Educators Network International (FENI), www.feni.org
Food Truck Operation, Foodtruckoperators.com
Institute of Food Technologists (IFT), www.ift.org
International Association of Culinary Professionals (IACP), www.iacp.com
International Caterers Association, www.icacater.org
International Council of Cruise Lines, www.iccl.org
International Council on Hotel and Restaurant Institutional Education (ICHRIE), www.chrie.org
International Food Service Executives Association (IFSEA), www.ifsea.com
International Foodservice Manufacturers Association (IFMA), www.ifmaworld.com
International Inflight Food Service Association (IFSA), www.ifsanet.com
Les Dames d'Escoffier International, www.ldei.org
National Association of College and University Foodservice (NACUFS), www.nacufs.org
National Association of Foodservice Equipment Manufacturers (NAFEM), www.nafem.org
National Association for the Specialty Food Trade (NASFT), www.fancyfoodshows.com
National Food Processors Association, www.nfpa-food.org
National Ice Carving Association (NICA), www.nica.org
National Restaurant Association, www.restaurant.org
National Society for Healthcare Foodservice Management (HFM), www.hfm.org
Research Chefs Association (RCA), www.culinology.com
Retailer's Bakery Association (RBA), www.rbanet.com
School Nutrition Association (SNA), www.schoolnutrition.org
Societe Culinaire Philanthropique, www.societeculinaire.com
Society for Foodservice Management (SFM), www.sfm-online.org
United States Personal Chef Association (USPCA), www.uspca.com
Women's Foodservice Forum (WFF), www.womensfoodserviceforum.com
Women Chefs and Restaurateurs, www.womenfhefs.org

INDUSTRY RESOURCES

Agri Beef www.agribeef.com/education/
American Lamb Board www.americanlamb.com/chefs-corner/curriculamb/
Butterball Foodservice www.butterballfoodservice.com
Maple Leaf Farms www.mapleleaffarms.com
National Cattlemen's Beef Association
National Pork Board www.porkfoodservice.org
National Turkey Federation www.eatturkey.org
North American Meat Institute www.meatinstitute.org

Seafood

Alaska Seafood Marketing Institute www.alaskaseafood.org
Bureau of Seafood and Aquaculture www.freshfromflorida.com/Recipes/Seafood
National Aquaculture Association thenaa.net

Produce

American Egg Board www.aeb.org
Apricot Producers of California www.califapricot.com
Avocados from Mexico foodservice.avocadosfrommexico.com
California Cling Peach Board www.calclingpeach.com
California Cling Peach Board www.calclingpeach.com
California Avocado Commissionwww.californiaavocado.com
California Dried Plum Board www.californiadriedplums.org
California Endive www.endive.com
California Fig Advisory Board www.californiafigs.com
California Kiwifruit Commission www.kiwifruit.org
California Pear Advisory Board www.calpear.com
California Raisin Marketing Board * Dietary Tool Kit www.calraisins.org
California Strawberry Commission www.calstrawberry.com
California Table Grape Commission www.tablegrape.com
Cherry Marketing Institute www.choosecherries.com
Concord Grape Association www.concordgrape.org
Cranberry Institute www.cranberryinstitute.org
Cranberry Marketing Committee*Tool Kit www.uscranberries.com
Dole Packaged Foods *Cost Savings Calculator www.dolefoodservice.com
Florida Dept. of Citrus www.floridajuice.com

Hass Avocado Board *Tool Kit www.avocadocentral.com
Idaho Potato Commission *Cost & Sizing Guides www.idahopotato.com
Leafy Greens Council www.leafy-greens.org
Leaf Greens Marketing Association www.lgma.ca.gov/
Louisiana Sweet Potato Commission www.sweetpotato.org
Mushroom Council www.mushroomcouncil.org
National Honey Board *Teacher Guide www.honey.com
National Mango Board *Lesson Plans www.mango.org
National Onion Association*Lesson Plans www.onions-usa.org
National Processed Raspberry Council www.redrazz.org
National Watermelon Promotional Board www.watermelon.org
NC Sweet Potato Commission www.ncsweetpotatoes.com
New York Apple Association www.nyapplecountry.com
North American Blueberry Council www.blueberry.org
Northwest Cherry Growers www.nwcherries.com
Olives from Spain olivesfromspain.us/
Oregon Raspberries and Blackberries www.oregon-berries.com
Pacific Northwest Canned Pear Service www.eatcannedpears.com/
Pear Bureau Northwestwww.usapears.com
Pomegranate Council www.pomegranates.org
Potatoes USA www.PotatoGoodness.com
Produce for Better Health Foundation www.5aday.com
The Soyfoods Council www.thesoyfoodscouncil.com
U.S. Apple Association www.usapple.org
USA Rice Federation www.menurice.com
Washington Red Raspberry Commission www.red-raspberry.org
Washington State Apple Commission www.bestapples.com
Washington State Potato Commission www.potatoes.com
Wheat Foods Council *Tool kits and classroom materials www.wheatfoods.org
Wild Blueberry Assn. of North America www.wildblueberries.com

Oil, Spices and Seasonings

North American Olive Oil Association *Classroom materials www.aboutoliveoil.org

Nuts and Legumes

Almond Board of California*Tool Kit www.almonds.com/food-professionals
American Pistachio Growers www.americanpistachios.org/
California Walnut Board www.walnuts.org
National Peanut Board www.nationalpeanutboard.org

Dairy Products

Emmi Roth USA *Pairing information us.emmi.com/en
Real CA Milk www.realcaliforniamilk.com/foodservice/
Wisconsin Milk Marketing Board Pairing guides www.wisdairy.com

Specialty Foods

New York Wine & Grape Foundation www.nywine.com
Popcorn Boardwww.popcorn.org

Baking Ingredients

Guittard Chocolate Company www.guittard.com
Bay State Milling Co. www.baystatemilling.com

Manufacturing/Distributors

Barilla America www.barilla.com/en-us
Bay State Milling Co.
www.baystatemilling.com
Dole Packaged Foods *Cost Savings Calculator www.dolefoodservice.com
Knouse Foods www.knousefoodservice.com
SYSCO www.sysco.com
Unilever Food Solutions www.unileverfoodsolutions.us
Verterra Dinnerware www.verterra.com