Prepare and produce cakes and pastries

D1.HPA.CL4.08

Trainee Manual

Australian Aid

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William Angliss Institute

Specialist centre for foods, tourism & hospitality

Prepare and produce cakes and pastries

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Trainee Manual

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The Association of Southeast Asian Nations (ASEAN) was established on 8 August 1967. The Member States of the Association are Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam.

The ASEAN Secretariat is based in Jakarta, Indonesia.

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Table of contents

Introduction to trainee manual

To the Trainee

Congratulations on joining this course. This Trainee Manual is one part of a 'toolbox' which is a resource provided to trainees, trainers and assessors to help you become competent in various areas of your work.

The 'toolbox' consists of three elements:

- A Trainee Manual for you to read and study at home or in class
- A Trainer Guide with Power Point slides to help your Trainer explain the content of the training material and provide class activities to help with practice
- An Assessment Manual which provides your Assessor with oral and written questions and other assessment tasks to establish whether or not you have achieved competency.

The first thing you may notice is that this training program and the information you find in the Trainee Manual seems different to the textbooks you have used previously. This is because the method of instruction and examination is different. The method used is called Competency based training (CBT) and Competency based assessment (CBA). CBT and CBA is the training and assessment system chosen by ASEAN (Association of South-East Asian Nations) to train people to work in the tourism and hospitality industry throughout all the ASEAN member states.

What is the CBT and CBA system and why has it been adopted by ASEAN?

CBT is a way of training that concentrates on what a worker can do or is required to do at work. The aim is of the training is to enable trainees to perform tasks and duties at a standard expected by employers. CBT seeks to develop the skills, knowledge and attitudes (or recognise the ones the trainee already possesses) to achieve the required competency standard. ASEAN has adopted the CBT/CBA training system as it is able to produce the type of worker that industry is looking for and this therefore increases trainees' chances of obtaining employment.

CBA involves collecting evidence and making a judgement of the extent to which a worker can perform his/her duties at the required competency standard. Where a trainee can already demonstrate a degree of competency, either due to prior training or work experience, a process of 'Recognition of Prior Learning' (RPL) is available to trainees to recognise this. Please speak to your trainer about RPL if you think this applies to you.

What is a competency standard?

Competency standards are descriptions of the skills and knowledge required to perform a task or activity at the level of a required standard.

242 competency standards for the tourism and hospitality industries throughout the ASEAN region have been developed to cover all the knowledge, skills and attitudes required to work in the following occupational areas:

- Housekeeping
- Food Production
- Food and Beverage Service

- Front Office
- Travel Agencies
- Tour Operations.

All of these competency standards are available for you to look at. In fact you will find a summary of each one at the beginning of each Trainee Manual under the heading 'Unit Descriptor'. The unit descriptor describes the content of the unit you will be studying in the Trainee Manual and provides a table of contents which are divided up into 'Elements' and 'Performance Criteria". An element is a description of one aspect of what has to be achieved in the workplace. The 'Performance Criteria' below each element details the level of performance that needs to be demonstrated to be declared competent.

There are other components of the competency standard:

- *Unit Title:* statement about what is to be done in the workplace
- *Unit Number:* unique number identifying the particular competency
- *Nominal hours:* number of classroom or practical hours usually needed to complete the competency. We call them 'nominal' hours because they can vary e.g. sometimes it will take an individual less time to complete a unit of competency because he/she has prior knowledge or work experience in that area.

The final heading you will see before you start reading the Trainee Manual is the 'Assessment Matrix'. Competency based assessment requires trainees to be assessed in at least 2 – 3 different ways, one of which must be practical. This section outlines three ways assessment can be carried out and includes work projects, written questions and oral questions. The matrix is designed to show you which performance criteria will be assessed and how they will be assessed. Your trainer and/or assessor may also use other assessment methods including 'Observation Checklist' and 'Third Party Statement'. An observation checklist is a way of recording how you perform at work and a third party statement is a statement by a supervisor or employer about the degree of competence they believe you have achieved. This can be based on observing your workplace performance, inspecting your work or gaining feedback from fellow workers.

Your trainer and/or assessor may use other methods to assess you such as:

- Journals
- Oral presentations
- Role plays
- Log books
- Group projects
- Practical demonstrations.

Remember your trainer is there to help you succeed and become competent. Please feel free to ask him or her for more explanation of what you have just read and of what is expected from you and best wishes for your future studies and future career in tourism and hospitality.

Unit descriptor

Prepare and produce cakes and pastries

This unit deals with the skills and knowledge required to Prepare and produce cakes and pastries in a range of settings within the hotel and travel industries workplace context.

Unit Code:

D1.HPA.CL4.08

Nominal Hours:

30 hours

Element 1: Prepare and bake cakes and filings

Performance Criteria

1.1 Select required commodities according to recipe and production requirements

1.2 Prepare a variety of cakes to desired product characteristics

1.3 Produce a variety of cakes according to standard recipes and enterprise standards

1.4 Use appropriate equipment to prepare and bake cakes

1.5 Use correct techniques to produce cakes to enterprise standards

1.6 Bake cakes to enterprise requirements and standards

1.7 Select correct oven conditions for baking cakes

Element 2: Decorate and present/display cakes

Performance Criteria

2.1 Prepare a variety of fillings and coating/icing, glazes and decorations for cakes

2.2 Decorate cakes using fillings and coating/icing and decorations according to standard recipes and/or enterprise standards and/or customer requests

2.3 Present/display cakes to enterprise standards using appropriate service equipment

Element 3: Prepare and produce pastries and fillings

Performance Criteria

3.1 Select required commodities according to recipe and production requirements

3.2 Prepare a variety of pastries

3.3 Produce a variety of pastries according to standard recipes and enterprise standards

3.4 Use appropriate equipment to prepare and bake pastries

3.5 Use correct techniques to produce pastries to enterprise standards

3.6 Bake pastries to enterprise requirements and standards

3.7 Select correct oven conditions for baking pastries

Element 4: Decorate and present pastries

Performance Criteria

4.1 Prepare a variety of filings coating, icing, glazes and decorations for pastries

4.2 Decorate pastries using coating, icing and decorations according to standard recipes and/or enterprise standards and/or customer requests

4.3 Present/display pastries to enterprise standards using appropriate service equipment

Element 5: Store cakes and pastries

Performance Criteria

5.1 Store at correct temperature and conditions of storage

5.2 Maintain maximum eating quality, appearance and freshness

Assessment matrix

Showing mapping of Performance Criteria against Work Projects, Written Questions and Oral Questions

The Assessment Matrix indicates three of the most common assessment activities your Assessor may use to assess your understanding of the content of this manual and your performance – Work Projects, Written Questions and Oral Questions. It also indicates where you can find the subject content related to these assessment activities in the Trainee Manual (i.e. under which element or performance criteria). As explained in the Introduction, however, the assessors are free to choose which assessment activities are most suitable to best capture evidence of competency as they deem appropriate for individual students.

		Work Projects	Written Questions	Oral Questions
Element 1: Prepare and bake cakes and filings				
1.1	Select required commodities according to recipe and production requirements	1.1	1, 2, 3, 4, 5, 6, 7, 8	1
1.2	Prepare a variety of cakes to desired product characteristics	1.2	9	2
1.3	Produce a variety of cakes according to standard recipes and enterprise standards	1.3	10	3
1.4	Use appropriate equipment to prepare and bake cakes	1.4	11	4
1.5	Use correct techniques to produce cakes to enterprise standards	1.5	12	5
1.6	Bake cakes to enterprise requirements and standards	1.6	13	6
1.7	Select correct oven conditions for baking cakes	1.7	14	7
Element 2: Decorate and present/display cakes				
2.1	Prepare a variety of fillings and coating/icing, glazes and decorations for cakes	2.1	15	8
2.2	Decorate cakes using fillings and coating/icing and decorations according to standard recipes and/or enterprise standards and/or customer requests	2.2	16	9
2.3	Present/display cakes to enterprise standards using appropriate service equipment	2.3	17, 18	10

		Work Projects	Written Questions	Oral Questions
Element 3: Prepare and produce pastries and fillings				
3.1	Select required commodities according to recipe and production requirements	3.2	19, 20, 21, 22	11
3.2	Prepare a variety of pastries	3.1	23	12
3.3	Produce a variety of pastries according to standard recipes and enterprise standards	3.2	24	13
3.4	Use appropriate equipment to prepare and bake pastries	3.2	-	14
3.5	Use correct techniques to produce pastries to enterprise standards	3.2	25	15
3.6	Bake pastries to enterprise requirements and standards	3.3	26	16
3.7	Select correct oven conditions for baking pastries	3.3	27	17
Element 4: Decorate and present pastries				
4.1	Prepare a variety of filings coating, icing, glazes and decorations for pastries	4.1 4.2	28	18
4.2	Decorate pastries using coating, icing and decorations according to standard recipes and/or enterprise standards and/or customer requests	4.3	29	19
4.3	Present/display pastries to enterprise standards using appropriate service equipment	4.4	30	20
Element 5: Store cakes and pastries				
5.1	Store at correct temperature and conditions of storage	5.1	31	21
5.2	Maintain maximum eating quality, appearance and freshness	5.1	32	22

Glossary

Term	Explanation
Aeration	The rendering of bakery products more appetising, palatable and digestible by the incorporation of air and/or gas, in one or more of the stages of production before baking. Air is introduced by the production of carbon dioxide gas (CO2) from yeast or baking powder. The internal expansion of air and gas and the pressure of steam during baking, all make a contribution to total aeration.
Albumen	One of the many proteins. Where the term is used in the bakery, it is generally accepted to mean the white of eggs.
All-in Process	All the ingredients are mixed together without any preliminary stages.
Bake Off	A term used by bakers to describe the operation of baking cakes after they have been prepared for the oven.
Baking	To render bakery products suitable for human consumption and digestion by cooking in an oven at correctly controlled temperatures.
Baking Powder	Any chemical or mixture of chemicals which, when moistened and heated, generates gas (usually CO2) which will aerate bread and cakes. Ideally the residual salts of reaction should be tasteless and without odour. The baking powder must comply with the Food and Drugs Act of the country in which it is used.
Baking Sheet	A metal plate on which buns, cakes, pastries and biscuits are baked. Generally they have three upturned sides and an open end. The open end will facilitate cleaning.
Basin	A round earthenware or plastic container used for making small quantities of icing.
Batch	The entire mixing of bread or cakes; the contents of the oven.
Batter	A soft, completed cake mixture. A very soft fermented mixture as for crumpets.
Bay	A well, made in a heap of flour and other dry materials to receive the liquid ingredients preparatory to mixing.
Beat	The aeration of fat, sugar, eggs and other materials by beating together. This can be done by hand or by machine.
Beater	A hand-shaped implement which, when fixed to a machine, beats ingredients such as fat, sugar and eggs.
Blanch	A term used to describe bringing anything to boiling point quickly. Used with vegetables prior to freezing to slow microbial activity. Also used to enable easy removal of skins such as from almond kernels.

Term	Explanation
Bowl	A rounded metal container used in the bakery for mixing, beating or whipping by hand. A bowl specially made for a machine is known as a machine bowl.
Bun	A small yeast fermented or chemically aerated, sweetened cake.
Cake	Refers generally to a baked mixture of fat, sugar, eggs and flour, with or without milk, baking powder, A cake can be of any shape or size.
Cake Hoop	A metal ring which supports a cake during baking.
Cake Tins	Small or large metal shapes in which cakes are baked. They may be plain or fluted.
Centigrade	Divided into 100 degrees, as the centigrade thermometer (first constructed by Celsius, 1701-44), in which the freezing point is zero and boiling point is one hundred.
Coat	To cover a cake or biscuit with almond paste and/or icing, fondant, cream or chocolate.
Constituent	A component part of the whole; one ingredient in a formula.
Cream	To beat fat and sugar or fat and flour together until light and fluffy. To add cream as a decoration of filling to a baked cake. A common term used to describe all kinds of creams such as dairy cream, butter cream, marshmallow cream, custard cream, etc.
Cup Cakes	Small cakes baked in crimped paper cups or cases.
Curdle	When fat, sugar and eggs are beaten together carefully, an emulsion is formed. If during the beating, the eggs are added too quickly, or are too cold, or the initial creaming of the fat and sugar is not complete, then the mixture will separate and lose its smooth consistency. Some aeration is lost when a mixture curdles.
Decorate	To add fruits, nuts, sugar, etc. to cakes before baking for the purpose of decorating. This is known as being oven-decorated or oven-finished. To add such decorating materials as the above, almond paste, chocolate, cream or icing after baking, generally to make a pattern or a design. The word is given special significance in describing artistic work in royal icing.
Deposit	The act of putting cake batter into hoops, pans, tins, etc., either by hand or by machine. The machine used is known as a depositor.
Emulsion	An intimate mixture of two fluids that normally would not mix, such as oil and water. This is done by means of an emulsifier, a machine that will break down the oil and water to minute particles while under pressure, for example, homogenised milk. If an emulsifying agent is used then the emulsion may become permanent. Fat, sugar and eggs correctly beaten together form an emulsion, the lecithin in egg yolks being a good emulsifying agent.

Term	Explanation
Essences	Aromatic compounds used for flavouring confectionery. They can be natural or synthetic or blends of both.
Fingers	Small finger-shaped rolls, biscuits, meringues, sponge cakes.
Fondant	A form of icing made by boiling sugar, water, glucose or a weak acid to 115¼C (140¼F), then agitating when it is cool until it forms a mass of minute crystals. It is the reflection of light on the tiny crystals that explains the gloss on correctly prepared fondant.
Glycerine	Colourless, odourless syrup with a sweet taste. It is soluble in water and alcohol. Because it is highly hygroscopic it is used in cake mixings to delay staling.
Grease	To brush fat into cake tins or to smear fat over baking sheets.
High-Ratio Cakes	The name hi-ratio is registered in the USA. The term is used to describe cakes containing high percentages of sugar and liquids based on the weight of flour. Special flour and super glycerinated fats are used for this type of cake.
Hygroscopic	The power of attracting moisture. For instance, glycerine is hygroscopic. Other examples are icing sugar and bi-carb soda.
Icing	The coating and decoration of a cake with royal or plastic icing. The term is also used to describe the decoration of cakes with fondant, water icing, or fudge icing.
Lecithin	A phosphorised fatty substance which has a great power as an emulsion stabiliser. Egg yolks and soya beans are both rich in lecithin.
Palette Knife	A thin, flat knife with a rounded end used for spreading icing and cake batter. An offset or crank-handled palette knife has the blade at a lower level than the handle. It is used for spreading cake or sponge mixtures on to baking sheets.
Pan	A broad, shallow baking tin.
Pound Cakes	A term used at one time to describe cakes made from 1 lb (500 gm) each of butter, sugar, eggs and flour. The term is now often used for cakes baked in a round hoop or oblong tin such as Madeira, Genoa and cherry.
Pre-gelatinised Starch	Pre-gelatinised or soluble starch is produced commercially by blowing a starch suspension onto stem heated rotating rollers. Gelatinisation and drying take place and the dried material is then flaked or ground to make a powder. The process ruptures the starch granules, without completely distorting them, so that they swell in cold water to form a viscous paste.
Recipe	An exact formula which will include the weights of the materials to be used for a particular type of bread or confectionery. All other details such as temperature, times, yields, etc., will also be recorded.

Term	Explanation
Sandwich Tins	Round shallow metal tins in which sponge sandwiches are baked.
Savoy Bag	A triangular shaped bag made of cloth or a plastic material into which a tube is inserted. It is used for piping meringue, sponge fingers and drops, soft biscuits, choux paste, etc., onto baking sheets. It is also used to pipe cream on, or in, cakes and pastries.
Scraper	A small oblong piece of plastic material, with two corners rounded for scraping down mixing bowls. The straight edge of the scraper can be used to smooth the side of a cake when coating with cream or butter cream. The straight edge can also cut in many ways so that a pattern can be made in the coating, for example, a comb scraper. A metal blade in a wooden handle that is used to scrape the surface of a bench, or for cleaning metal baking trays.
Sieve	Utensil with a wire or nylon mesh through which dry materials are passed. Sieving removes coarse particles, extraneous materials and also is a means of blending. Coarse sieves are used for the cleaning and draining of fruit. A sieve can also be used for fluids or semifluids.
Slab Cake/Block Cake	Plain or fruited cake baked in rectangular tins or frames. The slabs generally weigh about 11/2 to 31/2 kg each according to whether they are plain or fruited.
Sodium Bicarbonate	The constituent of baking powder that liberates C02. The maximum is liberated when the correct amount of acid is present.
Soft Flour	Flour containing weak gluten.
Strong Flour	Flour containing strong stable gluten.
Wash	To brush with egg, milk, water, before baking. To brush with a glaze after baking.
Water Brush	A soft-haired brush for washing cakes or pastries with water or other liquids before baking, or for glazing after baking.
Whip	To rapidly aerate a sponge, meringue or cream by means of a hand or machine whisk.
Whisk	An implement made of wire used to whip sponges, meringues and cream by hand. A similar implement is specially made to fix to a machine.
Yield	The calculated units from the total baked weight of a particular formula.

Introduction

Cakes

By definition, a cake is a ***'sweet baked'*** product usually containing flour, sugar, eggs and fat. Other typical ingredients are flavouring agents, liquids and leaveners or raising agents, such as baking powder or baking soda.

Cakes are generally categorised by their main ingredient or flavouring. For example:

- Cheesecake
- Chocolate cake or raspberry cake
- Fruit cake.

Or by their 'method of preparation:

- Mousse cake
- Chiffon cake
- Flourless cake.

Sponges

Sponges are made from three main ingredients – eggs, sugar and flour, with some containing a small amount of butter as well.

Classically made sponges (Genoise) do not contain baking powder or baking soda; their volume and light texture come solely from the air whipped into the egg and sugar solution.

Sponge cakes are almost always a:

- Component of assembled decorated cakes and
- Often a component of plated desserts.

Baking sponge cakes and variations thereof is a basic skill that every cook should master.

Not having a properly made sponge affects not only the taste and mouth feel of the product but also its final appearance, as it will be harder to decorate attractively.

Sponge cakes are classified by their preparation method, such as the creaming method or foaming method.

Sponges that do not contain any leaveners, typically the Genoise type, they should be baked immediately, or the bubbles will start to break.

Sponges should be partially cooled before unmolding so that they retain their shape better and also they aren't so fragile when cooled off.

Sponge cake freezes exceptionally well, even for weeks if wrapped properly.

Traditionally **Gateaux** and **Tortes** are described as a cake or sponge soaked with liqueur and layered with fillings, such as:

- Butter cream
- Fresh cream
- Mousse
- Ganache
- Custards
- Fruits and jellies.

Can include pastries such as:

- Puff pastry
- Short pastry
- Choux pastry
- Meringue based baked goods.

It is also interpreted as individual decorated wedge of a layered cake.

Gateau in France refers to all Cakes and Pastries of a certain size, usually bigger than one portion.

Modern Gateaux and Tortes finishing includes products which are:

- Glazed
- Masked
- Sprayed
- Covered or coated with chocolate
- Marzipan
- Fresh cream
- Icings
- Butter creams.

Decorations should be suited to the texture of the cake, so that the customer can experience something creamy, something crispy or crunchy and something fruity.

Gateaux and Tortes were ***traditionally*** decorated to be portioned by the slice.

Due to high labour cost this traditional form of decorating is fading from fashion.

Modern design can be an offset centre design but this does not lend itself to dividing the torte/gateau into portions.

Why is gateaux sometime spelt gateau; ‘gateau is singular’, ‘gateaux is plural’.

Nevertheless some traditional cakes may require individual slice decoration.

Today the terms are interchangeable and are grossly used to market a product – ‘the specialty cake’.

The Production Methods

The aim of each of the production method is to form an emulsion, where all ingredients are dissolved and evenly dispersed and able to incorporate air.

Cake Products:

- Sugar batter method
- Flour batter method
- Blending method
- Two stage method
- Three stage method
- All in method
- Boiling method.

Sponge Products:

- Traditional Process
- Genoese
- Emulsified Process
- The delayed soda process
- Separated Sponges.

Aeration methods

Several methods of aeration are used in cake making and often different methods are combined. The major types are:

Mechanical/Physical

This includes the creaming of fat and sugar, fat and flour, beating of mixtures, sifting of flour, and whipped egg whites folded into the batter.

Chemical

This is produced by the addition of baking powder which is the mixture of an acid and an alkali. When a liquid is added and warmth is applied, the two react and give off carbon dioxide (CO_2) which is entrapped in the structure of the cake. The most common baking powder is a mixture of on part bicarbonate of soda (alkali) and two parts cream of an edible acid.

Combination

This is where a combination of mechanical/physical and chemical is used. Emulsified sponge mixes and cake batters using the blend or all-in method are examples.

Cake Production methods

Sugar batter method

The fat and sugar are creamed together until light and fluffy.

The warmed egg is added in intervals (small additions) into the mixture, ensuing that with each addition the fat mixture is well creamed and not separated. The conditioning of the egg is very important as curdling of the batter can occur at this stage, mostly due to too cold egg. Curdling is the breakdown of the emulsion, which is being formed, as the fat separates out from the liquid. The egg should be warm, but these are the consequences if the temperature is incorrect:

- Egg too cold – the fat hardens, air escapes and the mix curdles
- Egg too warm – the fat turns to oil, the air escapes and the mix curdles
- Egg added too fast – the mix becomes saturated, the air escapes and the mix curdles.

It may also be possible to add the eggs in a steady stream; care must be taken not to curdle the mixture.

The batter should have a soft and velvety texture, after all egg is added.

The flour is sifted and gently mixed through the batter, until it is clear and smooth.

Do not over mix, as this would cause toughness.

Flour batter method

The fat is mixed with one third of the sifted flour until it is well creamed (+/-8 minutes), ensuring that the entire batter is aerated by scraping the bowl down.

The egg and sugar is whisk to a foam (sponge), using a separate bowl.

Egg and fat need to be of the same temperature and consistency before they are combined; add some of the egg mixture into the fat to adjust consistency.

Carefully fold into the fat mixture the following: remainder of eggs, sifted flour and baking powder and lastly the liquid. Each ingredient needs to be cleared in the batter, before adding the next ingredient. In order to avoid any lumps it is vital to follow the sequence.

The Blending method

The Blending Method does not require aeration or creaming of the fat with the sugar or the flour. The aeration of the batter takes place towards the end of the mixing cycle, rather than being the first step, as in the sugar or flour batter methods.

One of the reasons for this is that the formula or recipe contains a high level of added liquid in the form of milk, which replaces some of the egg. Due to the lower egg content, it would not be possible to make up the batter using conventional methods, and gain sufficient aeration.

When using the blending method, we rely on the fat, the egg white, and the small amount of gluten present to hold the air, which is beaten in. As the structure formed by these ingredients is not necessarily very strong, there is a limit to how much air they will trap. Therefore care is needed to prevent over beating which could break down the structure, losing most of the trapped air.

Baking powder is added to this formula to compensate for the lower aerating capacity of the batter; the extra gas (CO2) which is given off in the oven, increases lift during baking.

The addition of glycerine to the batter increases the moisture retention (holding) of the baked cake, and acts as an emulsifier in the batter by helping to hold in and combine the extra liquids with the fat.

There are two main variations of this method:

1. Two Stage method

Mix all ingredients except the egg and any liquid to a smooth paste. Add remainder ingredients (eggs and liquid) in intervals into the flour mix, and cream until light, 3 to 5 minutes.

2. Three Stage method

As above: Add 1/2 of the flour quantity into the mix after initial creaming (3 minutes on low speed), add the remainder of the flour and cream on low speed again.

Note:

Blending methods are used to produce “High Ratio Cakes”, which are made using special shortenings and special cake flours. These special shortenings and flours are used to produce sweeter and moister cakes, due to the capability of the ingredients to take larger amounts of liquid and sugar, than possible with traditional ingredients.

All in Method

This method is mostly used for the production of cheaper types of cakes, where the egg content is replaced with baking powder and liquid, mostly HR – Cakes. This method is also very commonly used with High Speed mixers. Ingredients are combined, scraped down and mixed for 6 - 7 minutes.

Boiled method

This method is very suitable for producing high quality Genoese Sponges and Madeira Cakes. It is very rarely used in the manufacturing, due to the lack of capacity boiling some of the ingredients. On the other hand, this is method is considered the safest with a small list of trouble shooting. The boiling method is unsuitable for the production of fruitcakes, as to the lightness of the sponge the fruit would sink to the bottom of the product.

Heat the fat to 50ºC, add all the flour, stirring well until all the mixture is completely cleared. Whisk egg and sugar to a stiff peak and incorporate into the flour-roux in 4 to 5 additions.

Sponge Production methods

All weighing and mixing equipment must be free from grease, wash with hot soapy water and rinse prior to use.

Traditional method: (Orthodox Sponge)

A basic egg sponge with ingredient ratio of 2 parts egg; 1 part sugar; 1 part flour.

The light texture is obtained by whisking the eggs and sugar together on a high speed, with the flour carefully folded in last. Nowadays some formulas contain small amounts of baking powder and also can contain some butter.

Egg and sugar is warmed to 38ºC, which increases the foam stability, due to the egg protein. Whisk on top speed until a full foam (sabayon) is achieved. If the mixture is then whisk for a short time on medium speed it will produce better and more stable foam, which in turn produces a better sponge. The sifted flour is then carefully folded into the batter, ensuring not to lose the trapped air. Immediately the batter is filled into baking dishes and baked for best results. Delays in baking of sponges often result in air loss and poor volume.

Enriched method: (Genoese Sponge)

The Genoese sponge is the same as an orthodox sponge, but it contains fat (up to 80% of the sugar weight), this addition increases shelf-life and handling properties of the sponges.

Melted butter (+/- 30ºC) is folded into the traditional sponge after the sifted flour is incorporated. Ensure cooler temperatures for butter, if too hot the egg will curdle.

Emulsified/stabilised sponges

The type more widely produced is the stabilised or emulsified sponge which differs greatly in mixing technique and handling properties.

For this formula, an all-in method is used, and as the name suggests, there is the addition of a stabiliser or emulsifier. Unlike the orthodox sponge, this sponge can be made and stored, which is due to the stabilised emulsion which retains its condition. The recipes usually contain water and proportions of baking powder.

Emulsifiers and stabilisers are available in powder or paste forms, the majority of them are based on lecithin and lacto albumen, these emulsifiers enable normally incompatible substances such as water and the fat from the egg yolk to combine and form an emulsion.

The action of the emulsifier is assisted by the beating process which reduces the egg particles to the same size as those of water. The result is more evenly distribution of fat and water.

Delayed Soda method

The baking powder ingredients are added after the sponge is aerated.

To achieve better aeration in the product: baking powder ingredients are not added at the same time. Liquids are placed into a mixing bowl; dry ingredients including cream of tartar are sifted and added into the liquids. This batter is then mixed until it is aerated.

Cream of tartar enhances the stability of the mix, as it conditions the protein in the eggs. Bicarbonate of soda is mixed with cold water and then added on low speed to the batter, the bi-carb soda should only be mixed with water just before it is added to the batter, otherwise it may looses the ability to aerate the sponge. The batter needs to be baked immediately for best results.

Separated Sponges

With this method the eggs are separated. Both the yolks and the whites are whisked separately with some of the sugar. These are then combined and the sifted flour is folded in. When whisking egg yolk it is recommended to add some water to the yolk, as with the addition of liquid better aeration takes place. Care must be taken not to over-whip the egg-whites, as it may results into egg-white lumps (nests) in the batter.

Element 1:
Prepare and bake cakes and filings

1.1 Select required commodities according to recipe and production requirements

History of Traditional or Simple Cakes

Originally it was found that a cake could be produced from four ingredients in equal proportions: sugar, butter, eggs and flour.

By creaming the butter and sugar then, adding the eggs and folding in the flour, a cake of good quality could be produced. The cake was rather heavy, close-textured and rich in flavour because butter was used as the fat.

Over the years, this formula has become known as the pound cake formula, and the method has become known as the sugar batter method.

These days this method is considered to be the conventional or basic method of cake baking. Pastry cooks still employ the sugar batter method, particularly in the manufacture of fruitcakes. Additional ingredients can include baking powder and milk/milk powder.

The following cakes are all derived from the basic pound formula.

- Madeira
- Butter
- Plain.

Original cakes were just mixtures of grain meal and water.

As milling processes became more refined then better flours were developed.

Sweetening ingredients were derived ingredients added to the base mix of grain meal and water. Honey was prized and also expensive.

When sugar became more readily available is when cake making took on a new era and cake maker separated away from bakers to form guilds of their own.

In the modern era, aerating agents, emulsifiers and anti-staling agents have moved cakes into an area where they do not need to be made on a daily basis and can travel over oceans to be sold on foreign soils and are still considered fresh.

Good quality plain cake has a life of approximately 5 days. Good quality English dark fruit cake will last for up to 6 months if stored properly, due to the high level of dried fruits, to hold moisture) and alcohol (to help preserve and slow the growth of mould, as well as flavour).

Ingredients

Flour

The gelatinised starch and coagulated protein provide:

- Body (crumb)
- Structural support
- Protein through coagulation
- Starch through gelatinisation.

Little or no gluten development is desirable in cake making as it would toughen the cake. However, flour is the major ingredient and it must have some gluten forming properties to give the cake its characteristic structure.

The following ranges of flours are those most commonly used in cake and/or sponge making:

Soft cake flours are normally used in making cakes, however good results may be obtained using plain flour. ***Cake flours*** have lower gluten content (7–8.5%) than other flours. They are finer than other flours and give soft, yielding gluten which does not toughen when mixed.

High-ratio flour, finely milled soft flour, bleached and chlorinated.

The bleaching or maturing treatment to which this flour is subjected has a tenderising effect on the gluten, and the finer grains enable more moisture to be carried in the batter, for instance, emulsified sponge.

Due to the lower pH in High Ratio flour the starch gelatinises at lower temperatures, this could be beneficial in terms of baking times.

Bakers' flour is used in cakes where a stronger structure is required, for example, rich fruit cakes.

In European countries, bakers' flour is often mixed with cornflour or wheaten starch to achieve lower gluten content and create a shorter and finer texture, only use up to half of the quantity of flour.

Fats

- Softens texture of cake
- Shortens the crumb (gluten)
- Improves eating quality
- Improves keeping quality
- Gives improved crust colour
- Assists primary aeration, that is, in the creaming stages for sugar batter or flour batter mixes.

There are various grades and types of cake margarines and shortenings used in cake making, as well as butter.

The fat in a cake batter tenderises the gluten and starch particles, making the crumb moist and tender. It also traps air during the beating process, which aids in the aerating of the batter and the cake.

If a High Ratio fat is used it is necessary to also use High Ratio flour to gain the entire benefit to incorporate increased amounts of liquid and sugar into the cake mixture.

Sugar

Icing sugar, Caster, A1, Brown, Raw, Demerara, Treacle, Golden Syrup and Honey

Functions of sugar:

- Softens crumb (gluten) and egg proteins
- Sweetens
- Gives crumb whiteness and crust colour
- Assists in aeration
- Aids to keeping qualities (attracts moisture)
- Affects symmetry.

As well as sweetening, sugar has a tenderising effect on the gluten and egg proteins, resulting in a soft, moist crumb. It also helps to hold moisture in the baked cake, slowing drying and staling.

Caster sugar has the advantage of dissolving more readily in cake batters. A sifted brown sugar may be used for some cakes, but the texture of the finished product will be changed. Syrups of various kinds are also used, for example, honey, but the cake, although remaining moist for a longer period will be heavier, as the sharp edges of sugar crystals help incorporate air during the creaming stage. This creates greater volume and softer crumb.

Eggs

- Moisten
- Aerate
- Bind.

Egg also provides:

- Structure
- Nutritional value
- Improved eating quality
- Improved keeping quality
- Colour.

Eggs help to form the structure of a cake because of their protein content which coagulates when heated. When the whole egg or egg white is beaten it entraps air which aids in the aerating process.

The '*lecithin'* in egg yolk acts as an emulsifier of the fat in the batter.

Eggs also contribute greatly to colour and flavour.

1 kg of eggs aerates one kg of flour.

Liquid

When liquid is used in cakes it is usually some form of milk (liquid whole milk and/or skim milk or full cream/skim milk powder) and water. Liquid helps to bring about the binding of the dry ingredients.

- Affects symmetry
- Increases volume
- Opens texture
- Tenderises.

Baking powder is used as an aerating agent in cakes and sponges, particularly where the amount of egg in a recipe or formula has been reduced, resulting in a reduction of the aerating capacity of the batter.

Other cake making ingredients

Glycerine

- Increased shelf life
- Better foam stability
- Finer texture
- Moister crumb
- Increases volume.

Glycerine improves the shelf life of sponges, cakes and other bakery items. It attracts moisture and therefore keeps bakery products fresher for a longer period of time.

Swiss rolls made with glycerine are less likely to crack.

Usage ratio: 2% of total cake batter

10 gm – 30 gm of glycerine to every 500 gm of sugar

70 gm of glycerine to every 5 kg dried fruit prevents soaked fruit fermenting.

Milk powder

Functions of milk powder

- Lactose, increases sweetness and crust colour
- Increased water content
- Contributes to the flavour
- Assisting in aeration and influencing volume
- Milk-fat enhances the shelf-life of the product.

Skim or full cream milk powder can be used.

Generally products made with milk, produce cakes with better volume, better colour and longer keeping qualities, than those with water.

In modern cake manufacture where emulsifiers are used, the use of egg produces superior cakes to those made with eggs only.

Milk powder should be sieved with the flour and baking powder to ensure even distribution.

Emulsifiers/stabilisers

- Lower ingredient cost possible, due to possibility to lower the egg quantity
- Shorter mixing time
- Better stability of the batter
- Moister sponges
- Better keeping qualities
- Finer and more uniform texture.

Emulsifiers and stabilisers come in powder or paste form. Most of them are made from a base of lecithin and lacto albumen. These agents enable normally incompatible substances such as water and the fat from egg yolk to combine and form an emulsion.

The action of the emulsifier is assisted by the beating process which reduces the egg particles to the same size as those of water. The result is a more evenly distribution of egg and water. When a perfect emulsion is obtained no separation takes place. In order to maintain such emulsions, a stabiliser is required.

Fruit

Cherries, mixed peel, dates, figs, apricots, currants, sultanas, raisins, pears and pineapple.

Ratios of fruit to batter in fruit cakes:

Lightly fruited cake 25%	1 part fruit	4 parts batter
Medium fruited cake 50%	1 part fruit	2 parts batter
Heavily fruited cake 100%	1 part fruit	1 parts batter

Nuts

Almonds, hazelnuts, walnuts, pecans, macadamia, peanuts

Used to enhance the flavour of the product, and usually toasted prior to use. The weight of nuts should not exceed the weight of sugar in a formula. The reduction of flour by 1/3 of the total weight of nuts is required to achieve best outcome.

Replace 30g of flour with 60 - 90g nuts.

Salt

- Slight volume increase
- Usage is 1.5% salt based on the egg quantity.

Seeds

Caraway, poppy seeds, sesame seeds

Used as they are. Caraway seeds may be soaked in water prior to use, to soften.

Flavours

Every ingredient used contributes and imparts its own flavours to the overall flavour of the products, i.e. Butter has a different flavour than cake margarine; brown sugar taste different to caster sugar and milk imparts different flavours than water.

As well as the natural flavours of the ingredients in the basic recipe other natural or synthetic flavours can be added to impart specific flavours.

Traditional cake making flavours are:

- Madeira - Lemon, Vanilla
- Genoise - Almond, Lemon, Orange
- Heavy Fruit Cake - Rum, Almond, Lemon, Orange, Vanilla and mixed spice
- Sultana Cake - Almond, Vanilla
- Dundee - Lemon, Orange, Almond, Cherry, Almond, Vanilla, Maraschino.

Cocoa Powder

Cocoa is added to many recipes to make a chocolate variety of the same product. To produce a chocolate sponge 4% of the flour is replaced with cocoa powder.

All cocoa powders contain cocoa butter, and an average would be 25%.

Cocoa powder usually replaces flour in such recipes and therefore the balance of the recipe is affected.

For example, in a recipe with 1000 grams for flour, after substitution there would be 960 grams of flour and 40 grams of cocoa powder.

Since cocoa powder has a greater water absorbing power than flour, there would now have to be an increase in milk-water content by an amount equal to the cocoa powder used.

Since the milk content has now been increased, there may also be a need to increase the baking powder slightly to achieve the same degree of aeration.

Here is an example:

A recipe of 1000 g flour would need to be adjusted as follows to make it into a chocolate cake:

Flour	960 gm
Add cocoa powder	40 gm
Add milk	40 gm
Add baking powder	2 gm

The natural colour of chocolate is influenced by the acidity and alkalinity of the batter, the former giving a greyish colour, whilst an alkaline one enhances the attractive rich chocolate colour. It is not unusual therefore to add a slight increase of bicarbonate of soda to achieve this purpose.

Chocolate cakes, which lack depth of colour, can usually be improved by the addition of some red colour with the chocolate.

1.2 Prepare a variety of cakes to desired product characteristics

Desired Characteristics

What make a customer purchase another product rather than the one produced by another?

What characteristics doe that other products have that the other does not?

The look of the product is the first stimulation that attracts a purchaser for the first time.

Other characteristics might be:

- Colour
- Mouth feel
- Moisture content
- Eating properties.

Many varieties are available out in the market place but all will come from their base English Pound Cake formula derivations of butter and Madeira cake styles.

Variations in flavour and ingredients occur but the style or type is basically the same.

Varieties of cake

- Sponge cake
- Genoise: Sponge cake with added butter
- Pound cake
- Butter cake
- Madeira cake
- Fruit cakes, light and dark.

1.3 Produce a variety of cakes according to standard recipes and enterprise standards

Plain Genoese Sponge

Yield: 3 x 300gm (warm method)

Item	Ingredients	Weight (gm)	%
A	Eggs	.400	160
	Sugar	.250	100
	Vanilla Essence	.005	2
	Lemon	to taste	
B	Plain Flour	.125	50
	Cornflour	.125	50
C	Butter, melted 40°C	.070	28
	Total	**.975**	

Method:

- Warm “A” to 38ºC whilst whisking, by using a double boiler
- Whisk the mixture until it cold, the sponge should have increased its volume and have a medium peak consistency
- Sift flour and cornflour and fold gently through the egg mixture, when most of the flour is mixed in, add the butter and mix through the batter until fully incorporated
- Care must be taken, not to handle the mixture too much, as it would lose its volume
- Place sponge into prepared cake rings or tin and level even, using the back of the hand
- Bake at 200°C until golden brown.

On removal from the oven, place sponge onto cooling wires. Rest there to cool for several minutes, before turning them upside down onto sugared greaseproof paper.

Cut a cross in the paper, which is the located at the base of the sponge, this allows any steam to escape from the sponge and prevents sweating. If sponges start sweating, there are very hard to handle and will cling to surfaces.

Note:

The warm and cold method is most commonly used, as it produces a more stable mixture than the separated method, this is due to the better emulsifying properties of the egg yolk (lecithin) in warm conditions.

Swiss Roll

Swiss roll is a thin sheet of sponge, usually spread with an appropriate filling, such as jam, cream, fruit spreads, butter cream or mousse. The sponge is then rolled up into a tight roll and cut into pieces.

Item	Ingredients	Weight (gm)	Ratio
A	Marzipan	.100	
	Eggs	.480	
	Sugar	.180	
B	Flour, plain	.080	
	Starch (potato, corn)	.080	
	Total	**.920**	

Method:

- Work marzipan with little egg until smooth, combined and of the same consistency as liquid eggs. This will ensure that there are no lumps in the mixture
- Place remaining ingredients together (Group “A”) into a mixing machine and whisk until aerated
- Sift flour and starch together and fold into the egg mix
- Spread mixture evenly onto greaseproof paper and bake immediately
- Bake at 210 – 230ºC until golden brown
- Remove from oven and place upside down onto sugared paper, whilst still lukewarm, this increases the moisture content in the roulade and it is easier to roll up after the filling is applied. Sugar or cornflour can be used to prevent the sponge from sticking to each other
- If the sponge sheet is too stiff to roll, bake at a higher temperature for less time next time. All ovens will bake differently
- Experience will teach you which is the best temperature and for how long will depend on the quality of the finished product.

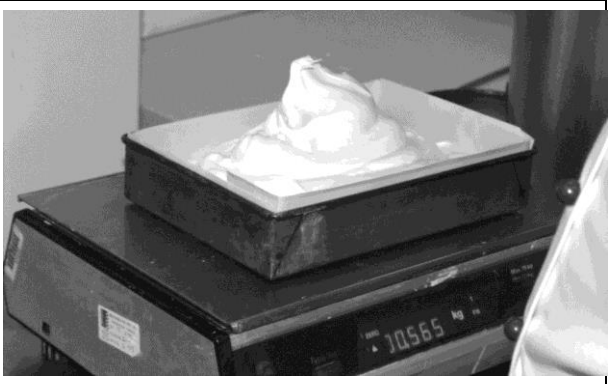
Be prepared to be flexible.

1.4 Use appropriate equipment to prepare and bake cakes

Introduction

Equipment may include:

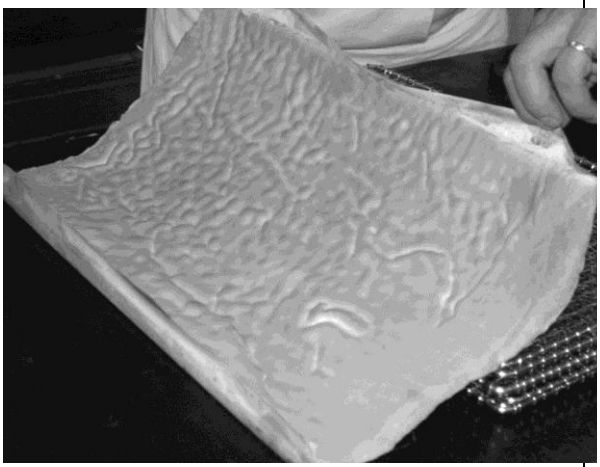
Baking Ovens

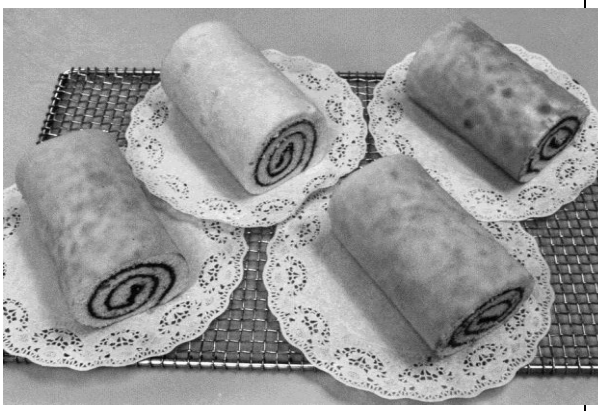


Measuring Scales

Spreading sponge batter on papered tray

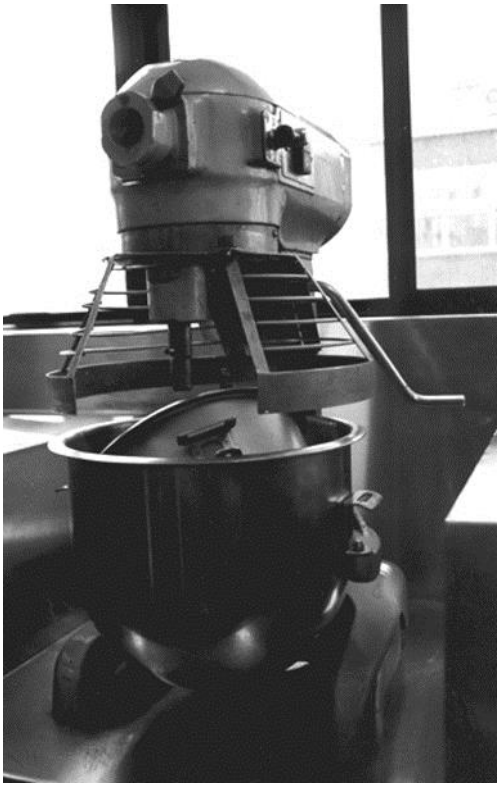
Sprinkle sugar on baked sponge sheet





Removing baked sponge sheet from tray

Rolled Swiss roll



Equipment preparation

When making sponges it is essential for high quality products that equipment is:

- Grease free
- Starch free
- Silicone free (if sponge is made with emulsifier).

Tin preparation

Mostly tins are lightly greased and then lined with greaseproof paper. The reasons for lining the tins are as follows:

- Maintains the shape of the product
- Greasing tin is not always satisfactory
- Insulates product during baking
- Adds to shelf-life of the product
- Hygiene.

To prevent sponges or cakes sticking to the tins, tins can also be prepared as follows:

- Using a greasing emulsion (this is a blended mixture of fat and starch)
- Brushing tin with fat and then dipping it into flour or almond meal, depending on flavour
- Brushing with fat and dipping the tin into sugar
- Using fat only.

Note

Due to different flavours of the greasing agent it is recommended to always use the same fat for greasing as it is used for the product, to retain the best possible flavour. Torte or Gateau rings are not to be greased, as the product would shrink and the centre of the sponge would be higher than the sides. The bases of the rings are covered with grease proof paper.

1.5 Use correct techniques to produce cakes to enterprise standards

Cake Production methods

Sugar batter method

The fat and sugar are creamed together until light and fluffy.

The warmed egg is added in intervals (small additions) into the mixture, ensuing that with each addition the fat mixture is well creamed and not separated. The conditioning of the egg is very important as curdling of the batter can occur at this stage (mostly due to too cold egg). Curdling is the breakdown of the emulsion, which is being formed, as the fat separates out from the liquid. The egg should be warm, but these are the consequences if the temperature is incorrect:

- Egg too cold – the fat hardens, air escapes and the mix curdles
- Egg too warm – the fat turns to oil, the air escapes and the mix curdles
- Egg added too fast – the mix becomes saturated, the air escapes and the mix curdles.

It may also be possible to add the eggs in a steady stream; care must be taken not to curdle the mixture.

- The batter should have a soft and velvety texture, after all egg is added
- The flour is sifted and gently mixed through the batter, until it is clear and smooth
- Do not over mix, as this would cause toughness.

Flour batter method

The fat is mixed with one third of the sifted flour until it is well creamed (around 8 minutes), ensuring that the entire batter is aerated by scraping the bowl down.

The egg and sugar is whisk to a foam (sponge), using a separate bowl.

Egg and fat need to be of the same temperature and consistency before they are combined. Add some of the egg mixture into the fat to adjust consistency.

Carefully fold into the fat mixture the following: remainder of eggs, sifted flour and baking powder and lastly the liquid. Each ingredient needs to be cleared in the batter, before adding the next ingredient. In order to avoid any lumps it is vital to follow the sequence.

The Blending method

The Blending Method does not require aeration or creaming of the fat with the sugar or the flour. The aeration of the batter takes place towards the end of the mixing cycle, rather than being the first step, as in the sugar or flour batter methods.

One of the reasons for this is that the formula or recipe contains a high level of added liquid in the form of milk, which replaces some of the egg. Due to the lower egg content, it would not be possible to make up the batter using conventional methods, and gain sufficient aeration.

When using the blending method, we rely on the fat, the egg white, and the small amount of gluten present to hold the air, which is beaten in. As the structure formed by these ingredients is not necessarily very strong, there is a limit to how much air they will trap. Therefore care is needed to prevent over beating which could break down the structure, losing most of the trapped air.

Baking powder is added to this formula to compensate for the lower aerating capacity of the batter. The extra gas (CO^2) which is given off in the oven, increases lift during baking.

The addition of glycerine to the batter increases the moisture retention (holding) of the baked cake, and acts as an emulsifier in the batter by helping to hold in and combine the extra liquids with the fat.

There are two main variations of this method:

Two Stage method

Mix all ingredients except the egg and any liquid to a smooth paste. Add remainder ingredients (eggs and liquid) in intervals into the flour mix, and cream until light for three to five minutes.

Three Stage method

As above: Add half of the flour quantity into the mix after initial creaming (3 minutes on low speed), add the remainder of the flour and cream on low speed again.

Note:

Blending methods are used to produce “High Ratio Cakes”, which are made using special shortenings and special cake flours. These special shortenings and flours are used to produce sweeter and moister cakes, due to the capability of the ingredients to take larger amounts of liquid and sugar, than possible with traditional ingredients.

All in method

This method is mostly used for the production of cheaper types of cakes, where the egg content is replaced with baking powder and liquid, mostly HR – Cakes.

This method is also very commonly used with High Speed mixers. Ingredients are combined, scraped down and mixed for 6 –7 minutes.

Boiled method

This method is very suitable for producing high quality Genoese Sponges and Madeira Cakes. It is very rarely used in the manufacturing, due to the lack of capacity boiling some of the ingredients. On the other hand, this is method is considered the safest with a small list of trouble shooting. The boiling method is unsuitable for the production of fruitcakes, as to the lightness of the sponge the fruit would sink to the bottom of the product.

Heat the fat to 50ºC, add all the flour, stirring well until all the mixture is completely cleared. Whisk egg and sugar to a stiff peak and incorporate into the flour-roux in 4 to 5 additions.

Traditional or Simple Cakes

English Pound Cake

Originally it was found that a cake could be produced from four ingredients in equal proportions: sugar, butter, eggs and flour.

By creaming the butter and sugar then, adding the eggs and folding in the flour, a cake of good quality could be produced. The cake was rather heavy, close-textured and rich in flavour because butter was used as the fat.

Over the years, this formula has become known as the pound cake formula, and the method has become known as the sugar batter method.

These days this method is considered to be the conventional or basic method of cake baking. Pastry cooks still employ the sugar batter method, particularly in the manufacture of fruitcakes. Additional ingredients can include baking powder and milk/milk powder.

The following cakes are all derived from the basic pound formula.

Insulation:

- Longer baking time means greater penetration of heat
- Possibility of thick crust formation
- Adequate insulation will prevent direct contact with heat source
- The number of thicknesses of paper depends on the richness of the cake, e.g. rich cake–longer baking–more insulation needed.

Lining of cake tins:

- Greasing tins not always satisfactory
- Maintains shape of product
- Insulates product during baking
- Adds to shelf-life of product
- Hygiene.

Remember:

- Use correct type of paper
- Always measure on inside surface of tins
- Paper should not be more than 1cm above top edge of tin
- Do not cut corners of paper until size is checked
- Always fold end flaps of paper to outside edge.

Madeira cake

(Sugar Batter) : Yield: 2 X Princess tins Size: 25cm x 18cm x 5cm

Item	Ingredients	Weight (gm)	%
A	Cake Margarine	.450	72
	Caster Sugar	.450	72
B	Eggs (21°C)	.560	90
	Glycerine	.035	6
	Vanilla	.005	1
	Lemon zest, grated	# 1	
	Milk	.060	9
C	Cake Flour	.625	100
	Baking Powder	.010	1.5
	Total	**2.130**	

Method:

- Blend “A” on low speed and correct temperature to 21°C
- Cream on medium speed using a paddle
- Warm all “B” together then slowly and in intervals ensuring to emulsify the mix after each addition
- Fold in sifted group “C” into “A” and “B”
- Place mixture into paper –lined princess tin
- Bake at 170°C with medium top heat (1 – 1.5 hours)
- Remove from oven and place onto cooling wires.

Note:

- Madeira cake should be baked on Cardboard or paper sheets.

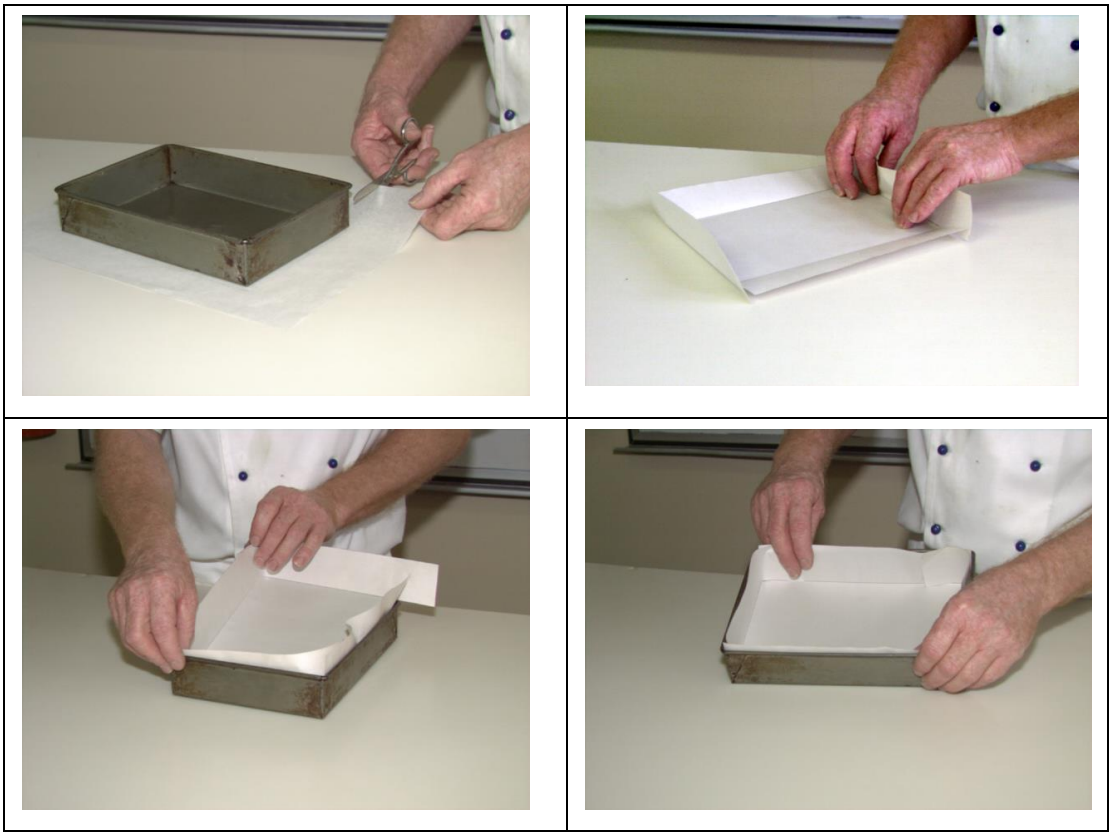
(Flour Batter): Yield: 2 x Princess tins

Item	Ingredients	Weight (gm)	Ratio
A	Cake Margarine Cake Flour	.390 .390	
B	Eggs (21oC) Caster Sugar Glycerine Vanilla Lemon Milk	.600 .450 .020 .005 # 1 .060	
	Cake Flour Baking Powder	.135 .007	
	Total	**2.060**	

Method:

- Blend “A” on low speed. Cream on medium speed using a paddle
- Whisk “B” into a sponge on fast speed
- Fold “B”, and “C” into “A”
- Place mixture into paper –lined princess tin
- Bake at 170°C with medium top heat (1 – 1.5 hours)
- Remove from oven and place onto cooling wires.

Lining a tin mould (princess tin) with paper for plain cake, Madeira



- Lay tin over paper
- Mark internal size on paper
- Fold paper to size required
- Cut as demonstrated
- Fold paper to shape of tin
- Insert paper into tin
- Paper edge must rise above top of tin.

Lining as tray with paper

- Clean the tray
- Apply small portion of grease to hold paper in place
- Line with paper, cut to size.

Gugelhupf

The Gugelhupf has its origin in Austria where it was once considered to be a status, or wealth symbol.

Traditionally it was, and still is, a breakfast, afternoon tea, or special Sunday treat. The name has many forms of spelling, such as 'Kuglehupf' or 'Kogelhopf', all of which relate to its conical shape, and the way in which it rises or 'jumps' in the tin.

The word 'Kogel' refers to a mountain peak, 'Gugel' to a woman's spherical headdress, and the word 'hupfen', meaning to jump or leap.

The traditional Gugelhupf is aerated with yeast; however other varieties are aerated by chemical means such as baking powder and/or bi-carb soda. They often contain rum soaked raisins, and can be finished with icing, chocolate, and sugar, topped with nuts or fruits.

The hole through the centre of the cake assists in the baking process, shortening the time, as heat penetration is increased.

A batter temperature of between 20°C–24°C is best suitable for this type of aeration.

Basic Gugelhupf

Yield: 4x 760grm / 21cm mould

Item	Ingredients	Weight (gm)	Method
A	Butter Glucose Caster Sugar	.580 .120 .580	
B	Eggs (21oC) Vanilla Lemon zest Milk	.580 .005 .005 .340	
C	Bakers Flour Baking Powder	.800 .040	
	Total	**3.050**	

Method:

- Cream "A" together well at 21°C
- Add "B", little at a time
- Fold in sifted "C"
- Fill mixture into well-greased and floured Gugelhupf moulds
- Bake at 190°C until golden brown in colour
- Remove from oven, turn out of the mould while still warm and place onto cooling wires.

For variations add the following to 760 gm of basic Gugelhupf mixture:

Fruit Gugelhupf

Add:

- 30 gm Sultanas
- 20 gm Citrus Peel
- 10 gm Currants.

Finish:

- Brush with boiled apricot jam and roll the bottom edge in Croquant nibs.

Orange Gugelhupf

Add:

- 60 gm Orange Zest
- 40 gm grated chocolate.

Finish:

- Brush with boiled apricot jam and glaze with thin orange fondant.

Almond Gugelhupf

Add:

- 40gm toasted Almond meal
- 40gm Sultanas.

Finish:

- Sprinkle flaked almonds into the grease tins. Dust with vanilla icing sugar after baking.

Chocolate Gugelhupf

Add:

- 60gm melted chocolate
- For chocolate chip, grate the chocolate into the mix.

Finish:

- Dust with icing sugar and cocoa powder.

Sponge Production methods

All weighing and mixing equipment must be free from grease, wash with hot soapy water and rinse prior to use.

Traditional method: (Orthodox Sponge)

A basic egg sponge with ingredient ratio of 2 parts egg; 1 part sugar; 1 part flour.

The light texture is obtained by whisking the eggs and sugar together on a high speed, with the flour carefully folded in last. Nowadays some formulas contain small amounts of baking powder and also can contain some butter.

Egg and sugar is warmed to 38ºC, which increases the foam stability, due to the egg protein. Whisk on top speed until a full foam (sabayon) is achieved.

If the mixture is then whisk for a short time on medium speed it will produce better and more stable foam, which in turn produces a better sponge.

The sifted flour is then carefully folded into the batter, ensuring not to lose the trapped air.

Immediately the batter is filled into baking dishes and baked for best results.

Delays in baking of sponges often result in air loss and poor volume.

Enriched method: (Genoese Sponge)

The Genoese sponge is the same as an orthodox sponge, but it contains fat (up to 80% of the sugar weight), this addition increases shelf-life and handling properties of the sponges.

Melted butter (+/- 30ºC) is folded into the traditional sponge after the sifted flour is incorporated. Ensure cooler temperatures for butter, if too hot the egg will curdle.

Emulsified/stabilised sponges

The type more widely produced is the stabilised or emulsified sponge which differs greatly in mixing technique and handling properties.

For this formula, an all-in method is used, and as the name suggests, there is the addition of a stabiliser or emulsifier. Unlike the orthodox sponge, this sponge can be made and stored, which is due to the stabilised emulsion which retains its condition. The recipes usually contain water and proportions of baking powder.

Emulsifiers and stabilisers are available in powder or paste forms, the majority of them are based on lecithin and lacto albumen, these emulsifiers enable normally incompatible substances such as water and the fat from the egg yolk to combine and form an emulsion.

The action of the emulsifier is assisted by the beating process which reduces the egg particles to the same size as those of water. The result is more evenly distribution of fat and water.

Delayed Soda method:

The baking powder ingredients are added after the sponge is aerated.

To achieve better aeration in the product: baking powder ingredients are not added at the same time. Liquids are placed into a mixing bowl; dry ingredients including cream of tartar are sifted and added into the liquids. This batter is then mixed until it is aerated.

Cream of tartar enhances the stability of the mix, as it conditions the protein in the eggs. Bicarbonate of soda is mixed with cold water and then added on low speed to the batter, the bi-carb soda should only be mixed with water just before it is added to the batter, otherwise it may looses the ability to aerate the sponge. The batter needs to be baked immediately for best results.

Separated Sponges

With this method the eggs are separated. Both the yolks and the whites are whisked separately with some of the sugar. These are then combined and the sifted flour is folded in. When whisking egg yolk it is recommended to add some water to the yolk, as with the addition of liquid better aeration takes place. Care must be taken not to over-whip the egg-whites, as it may results into egg-white lumps (nests) in the batter.

Balance of ingredients

Formula balance is the term usually used with regard to the balance of ingredients.

To produce a good quality cake, the essential ingredients must be present in the proper proportions. Various ingredients are tenderising agents–sugar, shortening and egg yolk.

These counteract the toughening or binding agents–flour, egg white and milk solids. Thus an unbalanced cake formula would produce either a tough cake or a crumbly textured cake.

In general it is recommended to use the same quantity of flour to sugar, with the exception of High Ratio formulas where an additional 20% sugar can be used.

The density of a sponge is determent with the egg content. The more egg compared, to flour and sugar, is used the lighter the sponge.

Some formulas are made with equal parts of sugar, flour and eggs.

These sponges are classified as heavy or dense, but flour and sugar can now be reduced to half or less of the egg quantity, which produce lighter sponges.

For a workable cake balance please note:

Flour	=	Structure	100%
Fat	=	Richness	Up to 80%
Egg	=	Quality decreases if egg quality is below the fat level Eggs are used up to the same level as the fat or 25% above	
Baking powder	=	Depending on the egg quality in the formula Egg can aerate its own weight in flour, therefore up to the same level of the fat or 25% above	
Cakes under 25%	=	6.25 gm for every 100 gm of flour	
Cakes under 1kg	=	3.12 5gm for every 100gm flour	
Cakes above 1.5kg Flour	=	2 gm for every 100gm flour	
Milk	=	85 ml milk moisten 100gm flour	
Sugar	=	All other ingredients are added up and divided by 4, this gives the amount of sugar to be used	

Temperature of ingredients

To ensure that a cake and sponge batter form a stable emulsion, the temperature of the ingredients should be between 18ºC and 21ºC.

It is therefore important to temper the ingredients. This is usually achieved by warming the egg quantity to a certain temperature.

Higher temperatures produce an open, irregular texture and low volume, whereas lower temperatures will result in scoring and possible sinking in the centre.

It should also be acknowledged that with cooler temperatures the sugar does not dissolve easy in the fat and longer mixing times are required, this will lead to over-aeration and a possible cause of collapsing the cake.

During creaming the basic texture of a cake is formed and the cake will be affected, if the ability of the fat to incorporate air is affected due to the influence of wrong temperatures.

In order to form an emulsion between ***water in the egg*** and ***fat in the egg yolk*** it is found that the ***lecithin*** in the egg-yolk works best at 21ºC.

Therefore it is also recommended to warm the eggs prior to adding it into the fat.

1.6 Bake cakes to enterprise requirements and standards

Product characteristics that customers look for come from the following

Colour of the product when it is finally removed from the oven is important to the visual appeal of the product. Colour stimulates the senses and encourages the customer to purchase.

Appearance is about form and shape. It is important that all pieces have the same appearance.

Consistency and texture is about how it feels in the mouth when the customer is consuming the product.

Moisture content adds to the shelf life and mouth feel of the product.

Mouth feel and eating properties.

This is achieved by maintaining consistency of production. Nobody is allowed to move away from the given formula, shape design.

Recipes need to be followed and each recipe should state the yield from each production run, defining weights and number of units.

To achieve this each product must be moulded the same and must all look the same.

Lining of moulds with paper lining helps to standardise this process.

Pre formed paper moulds inside tinware cuts the cost of cleaning after baking and makes post bake handling more convenient and easier.

Using paper lining makes it easier to handle product and helps with preserving moisture inside the cake after baking.

Sponge cake tins are not normally lined because they are light and not necessarily heavy except when larger sizes are produces.

Cakes are usually heavier by nature and the paper lining helps to hold cake together when they are being removed from the moulds.

Heavy English style fruit cakes use the paper as insulation during the baking process as the fruit is high in sugar and the insulation slows down the drying while allowing the heat to penetrate to the centre of the cake. They can take 2-3 hours to bake in a low temperature oven.

1.7 Select correct oven conditions for baking cakes

Correct Oven conditions for baking cakes and sponges.

Oven settings for cakes

Solid heat of 150ºC –180ºC will depend on cake size and thickness.

Oven should be 'solid' heat (bring to temperature and stabilise by holding at this temperature for 15-20 minutes before placing cakes in oven).

To prevent premature colouring of cake surfaces, they may be covered with sheets of clean paper or a baking tray may be placed on top of the cakes for approximately 50% of the baking time.

To test when cakes are baked, use a thermometer to determine the internal temperature.

The baking process is complete when the centre of the product has reached gelatinisation temperature (87ºC – 90ºC). Further baking beyond this point will only dry the product and reduce shelf life.

A fine skewer may be inserted into the cake which should come out clean if cake is baked.

Do not remove cakes from tins until cold to avoid damage. Cold cakes should be wrapped as soon as possible.

Oven settings for sponges

Sponge cake and Genoise sponge are of a lighter density than cake. Sponge will cook quicker so oven settings can be 180ºC – 200ºC.

Sponge sheets or Swiss roll sponge is thin and it cooks very quickly. In order to keep pliability in the product so it can be rolled it can be cooked at a higher temperature.

Gelatinisation and coagulation will happen quicker and there is less drying out of the product. After cooling it can be moulded or rolled easier.

Sponge sheets can be baked at 220ºC-230ºC for approximately 7 minutes.

Work Projects

It is a requirement of this Unit you complete Work Projects as advised by your Trainer.

You must submit documentation, suitable evidence or other relevant proof of completion of the project by the agreed date.

The student will need to choose 3 different cake recipes and 2 sponge recipes to bake.

There is a need for a plan of action to be supplied before commencement showing the recipes to be used. With these recipes all ingredients need to be listed.

1.1 List all ingredients required for production

- Remember the role of the ingredient

1.2. List all equipment required to complete the selected recipes

- Make an accurate list of all equipment required
- Think laterally and leave nothing to chance

1.3. Bake the selected recipes

- Speak to trainer regarding the amount that is required for assessment.

Summary

Prepare and bake cakes and filings

Select required commodities according to recipe and production requirements

- Formula balance and ingredient function knowledge is imperative if understanding of the cake making process is to be achieved
- Role and effect of flour, sugar, fat, eggs and flavourings need to be understood. The role in the product and effect upon each other ingredient is required.

Prepare a variety of cakes to desired product characteristics

- Variety can be listed under a couple of headings. Sponge and cake. Heavy or light. Festive or common. The different products from different countries add to the expanding list
- Most of this manual is based on European style cakes and sponges but the skill and expertise is the same in all countries
- All cakes should be well formed and have a bold and inviting appearance. Its eating qualities should leave a pleasant mouth feel giving consumer a feeling of contentment
- Consumers look for appearance and shape, consistency in size and texture.

Produce a variety of cakes according to standard recipes and enterprise standards

- While one enterprise makes large cake, another might make the same cakes in only small sizes
- Black Forest cake, Gateau foret-Noire and Schwarzwalder Kirshtorte are all the same cake
- There will be slight variations with all but will all have the same base ingredients and may differ slightly in appearance. Importantly they will be produced the same in each of the establishments every time.

Use appropriate equipment to prepare and bake cakes

- Use of moulds, baking trays, operating mixers and attachments, baking ovens, flat bed, fan forced or rotating racks, cooling rooms and scaling equipment
- Skills in how to accomplish all these tasks will need to be mastered prior to achieving good results.

Use correct techniques to produce cakes to enterprise standards

- Scaling ingredients, aerating ingredients, incorporating ingredients, depositing batters and loading ovens will produce desired products.

Bake cakes to enterprise requirements and standards

- **Colour of the product** when it is finally removed from the oven is important to the visual appeal of the product. Colour stimulates the senses and encourages the customer to purchase
- **Appearance** is about form and shape. It is important that all pieces have the same appearance
- **Consistency** and texture is about how it feels in the mouth when the customer is consuming the product
- **Moisture content** adds to the shelf life and mouth feel of the product
- **Mouth feel** and eating properties are sensory delight for the consumer. If this is disappointing then consumer will not come back.

Select correct oven conditions for baking cakes

- Is a hot oven needed or cool oven needed. What are the ingredients in the cake?
- All things need to be taken into account when baking:
  - Is the product light?
  - Is the product heavy?
  - Does the product need to be insulated?

Element 2:
Decorate and present/display cakes

2.1 Prepare a variety of fillings and coating/icing, glazes and decorations for cakes

Butter creams

The most used butter creams are the following:

Italian Butter cream, which is based on a boiled meringue and butter. This method is very stable, has an excellent shelf-life and is easy to produce. Fondant and butter mixture is not classified as an Italian meringue; it has poor eating qualities and is lacking flavour.

German Butter cream is based on a Crème patisserie. This method is particular good as Crème patisserie is standard for most producers of cakes and desserts, therefore it is excellent to use in emergencies. Shelf-life is limited due to the egg content.

French Butter cream is based on a sabayon. It is difficult to make, due to the warming of the egg-mixture, this when overheated coagulates and small egg lumps are visible in the cream. The butter cream is very light and has particular good eating qualities it is very suitable to use for petit fours.

With all of these recipes it is important to cool the initial mix, before the butter is added. It should be of the same temperature and consistency as the butter.

If the mixture is too warm, the butter melts and it loses volume and lightness.

If the mixture is too cold, the butter is hard and it does not combine with the base, it results in lumps of fat in the mixture - it slits.

Note:

Butter cream can be flavoured in many ways, either with alcohol, essences, fruit, nuts, nougat, chocolate etc.

- It is used to decorate or fill cakes, desserts, roulades and petit fours
- Butter cream products need to be stored in the refrigerator, but should be eaten at a temperature of 12ºC – 15ºC as its best
- To lighten butter cream and increase the “melt in the mouth”, some butter may be replaced with copha, which has a lower melting point
- Split butter cream can be tempered again, by warming over a water-bath.

Italian Butter cream (Meringue Based)

Item	%	Ingredients	Weight (gm)	Method	Amount Used
A		Caster Sugar Water Glucose	1.000 .300 .050		
B		Egg Whites	.200		
C		Unsalted Butter Vanilla Salt	1.500 .010 .005		
		Total	**3.065**		

Method:

- Place “A” into a clean stainless steel pan, over a low heat, stirring to the boil
- At the boil stop stirring and turn up the heat until the sugar reaches a temperature of 121ºC. WASH DOWN THE SIDES OF THE PAN FROM TIME TO TIME to avoid crystallisation of the sugar
- Commence whisking the meringue when the sugar reaches boiling point. When the sugar reached 121ºC turn the machine down to low speed and slowly pour the hot syrup in. Turn to fast speed and whisk until cold
- Lastly add the softened butter and flavours into the meringue and cream.

German Butter cream (Custard Based)

Item	Ingredients	Weight (gm)	Method
A	Milk Caster Sugar	.500 .120	
B	Cornflour Vanilla Egg Yolk	.040 to taste #1	
C	Unsalted Butter	.660	
	Total	**1.330**	

Method:

- Mix a little cold milk with the cornflour and the egg in a bowl
- Boil the remaining milk pour onto the "slurry" and return to the pan
- Re-boil whilst stirring
- Strain and whisk cold
- When cold add into the creamy butter.

French Butter cream (Sabayon Based)

Item	Ingredients	Quantity (gm)	Ratio
A	Eggs Sugar Vanilla Salt	.175 .175 .010 pinch	
B	Butter, unsalted	.430	
	Total	**.810**	

Method:

- Whisk "D" in a water bath to 45ºC (Sabayon)
- Place into the mixing machine and whisk cold
- Cream butter to the same consistency and temperature as the egg and fold both together.

Fondant

The value of fondant as a decorative medium lies in the attractive smooth glossy surface, which can be retained on the cake surface when correctly applied. Fondant may be coloured and flavoured.

There are several types of fondant and these are:

- Extra soft
- Soft
- Standard
- Hard.

Fondant must be handled with care if the loss of gloss is to be prevented when it used in cake decoration. Having the correct temperature is a key factor in handling fondant.

Fondant consists of minute sucrose crystals suspended in saturated sugar syrup with sufficient invert sugar or glucose to prevent the growth of crystals.

In preparing fondant for use it should be heated in water-jacket pans with the appropriate amount of stock syrup to produce the desired consistency, because in this way there is less danger of overheating. Thermostatically controlled pans are desirable.

The temperature should not greatly exceed 38°C if a good gloss is to be retained.

If overheated, the crystals redissolve and, on cooling, recrystallise into larger crystals, which do not reflect as much light, and the result is that the gloss will be spoiled.

If it is under-heated the fondant will not set firm, but will be sticky and runny.

The bulk fondant should therefore be heated carefully to no more than 39°C, stirred continuously, then thinned down to the required consistency and used immediately.

At 37°-39°C, approximately 115% of the sucrose crystals dissolve, and a recrystalisation cement the remaining crystals together and thus produce a firm dry surface.

Fondant can be thinned down by the addition of any of the following:

- Sugar syrup
- Alcohol or liquid flavouring or colouring
- Egg white.

The best thinning agent to use is sugar syrup as it is the most cost effective and easier to regulate in amounts to be used.

1 part sugar with 1 part water

Aromatics may be added but then all those flavours go into everything

Bring to boil then cool and store for further use as required.

Chantilly Cream

Ingredients

150 ml	Cream
15 gm	Castor Sugar
Few drops	Vanilla Essence

Method

- Place ingredients into a bowl
- Whisk until the cream is thick and remains in the whisk
- Refrigerate until required.

2.2 Decorate cakes using fillings and coating/icing and decorations according to standard recipes and/or enterprise standards and/or customer requests

Decoration of cakes become eclectic and incorporates the personal style of the pastry cook.

Good decoration skills need to be practiced.

Spreading of cream

- Requires even thickness all across the layer of sponge cake.

Piping rosettes

- Single layer, double layer - all need to be the same size. Size needs to be in balance with the size of the cake.

Curling Chocolate

Properly tempered chocolate is able to be shaved and curled as it is setting on the cooling bench. Planning, practice and expertise is required to be able to execute this action.

Enrobing

Enrobing is the action of applying a glaze (icing or ganache) to the exterior of a cake so that the coating fully covers the outside of the cake.

Correct temperatures need to be achieved because

- If the glaze is too hot it will just fall off the cake
- If it is too cold in will not run properly and the glaze will be too thick when it is set.

Consistency of design

When decorating certain considerations need to be taken account:

- Symmetry
- Consistency in size of decorations
- Balance across the product.

Many cakes and gateaux look spectacular when finished.

- Gateaux: Multiple layers of cake and filling that has been enrobed and decorated.

When designing your spectacular masterpiece other things need to be looked.

- Is the product going to be sold in one piece?
- Is the product going to be served in house?
- Can the product be cut easily?
- When cut, will all the slices look the same?
- Will the customers all get equal looking serves?

Expectations of customers change but all of the above points need to be considered.

2.3 Present/display cakes to enterprise standards using appropriate service equipment

Display of product will vary from enterprise to enterprise.

- Is the product to be consumed in house?
- Is the product to be taken away to be served and consumed elsewhere?
- Is it to be consumed in café?
- Is the product to be served in fine dining restaurant?

All these questions need to be answered before a standard can be followed.

Work Projects

It is a requirement of this Unit you complete Work Projects as advised by your Trainer. You must submit documentation, suitable evidence or other relevant proof of completion of the project by the agreed date.

The student will need to produce a diagram of a cake that they will be decorating:

- A brief history of the style will need to be presented
- Define the ethnic origin of the cake
- Does it have any significance about it? Special occasions, festival time.

2.1 Describe the filling that may be used in the cake :

- Does the cake need a filling?
- What is the role of the filling?

2.2. Describe the process of glazing the cake:

- What type of glaze will be used?
  - Fudge icing
  - Fondant
  - Ganache.

2.3. State how the cake is going to be presented:

- Is it going to be sold whole?
- Is the cake going to be sliced and sold in pieces?
- Will the customer take the cake home?
- Will the cake be consumed?

Summary

Decorate and present/display cakes

Prepare a variety of fillings and coating/icing, glazes and decorations for cakes

- Coatings are to add eye appeal and flavour, also slows product from staling
- Coatings and icing need to compliment cake
- Fillings also need to compliment the products.

Decorate cakes using fillings and coating or icing and decorations according to standard recipes and or enterprise standards and or customer requests

- Many forms of decorations are available to the practitioner
- If Black Forest cake is going to be presented in places other than the Traditional German Forest area of Bavaria then variations are going to occur
- It is up to the enterprise to set the standards and then it is up to the practitioner to adhere to them.

Present/display cakes to enterprise standards using appropriate service equipment

- Presentation technique will depend on where the product is going to be sold
- What facilities are available to present the product in it best light?

Element 3:
Prepare and produce pastries and fillings

Pastries

Pastry by definition is a mixture of wheat flour, fats, salt and water.

Pastry comes available in several forms or types.

Types of Pastry

Several distinct varieties and mostly of European origin:

- Short Pastry: Savoury and Sweet Pastry or Shortbread
- Puff or Flaky Pastry
- Choux Pastry.

Varieties of Mediterranean and Middle Eastern origin:

- Phyllo
- Brik
- Kataifi.

These can all be classed in the short paste category.

Short Pastry

Short pastry doughs will have a short texture. Meaning that when they are mixed the dough can be pulled apart easily rather than stretched until it broke.

Short pastry can be savoury or sweet.

Savoury short pastry will contain fat up to 50% of the flour weight, salt and water. Some enriched doughs can contain eggs that replace water content.

Sweet short pastry (traditionally shortbread) can be made from 2 separate formulas.

- 2:1:1 – 2 Flour: 1 Sugar: 1 Fat
- 3:2:1 – 3 Flour: 2 Sugar: 1 Fat.

Both of these formulas will use egg or water as a binding agent in the closing stages of mixing.

Both formulas can have an aeration agent added to give a lighter eating texture.

Refer to recipes in Appendices in back of manual.

Puff Pastry

Classical European style pastry that is dough of flour salt and water that has had fat incorporated in layers; this process is referred to as lamination.

Lamination is also used in sweet yeast dough production; Danish, croissant.

Ingredients

Flour

Flour should be smooth, soft, and rich in starch with low gluten content. A part of the flour can be replaced by cornflour. It should be well sieved with the flour and baking powder (if used).

If the flour protein level is too high, then the gluten which inevitably forms will reduce shortness to a greater degree than when low protein flour is used.

If the protein level is too low, then flow-out is possible, as some structural properties are still required.

Rice flour

Shortbread made with rice flour, or short pastry dipped into rice flour increases crispness, e.g. Scotch Shortbread.

Sugar

As a general rule, the sugar must be fully dissolved during the mixing process. Undissolved sugar can have undesirable effects on the product. It can produce a crust with a gritty texture and it can cause the appearance of dark spots of caramelised sugar on the surface of the baked product.

Dissolved sugar also has an influence on the moisture level in the dough. Another function of sugar in the dough is that it has a gluten softening effect, which prevents the over toughening of any gluten which is formed. Because sugar can only do this when in solution, the dissolving of the sugar is vital.

The general rule for ensuring that sugar is fully dissolved is to relate crystal size to mixing times. For instance, most shortbread dough has a relatively short mixing cycle and do not contain a significant level of moisture. Therefore, a small crystal size sugar such as caster sugar is required. Scotch Shortbread, which has an even shorter mixing cycle, and contains no added moisture, requires the use of icing sugar, to ensure that it dissolves rapidly.

Fat

The fat is the ingredient with the major influence on both flavour and consistency. Shortbread can be made with margarine or butter, or a mixture of both.

With regard to consistency: Short pastry with a low fat content easily becomes doughy and tough, as it has to have more milk or water to bind the flour. After baking it may shrink and get hard quickly. Short pastry with too much fat, becomes very soft and oily, making it difficult to work with. Soft, warm and oily fats are also unsuitable.

If the fat is too cold, a longer mixing time may be required. This is to prevent the possibility that inadequate dispersion of the fat will allow formation of gluten from the uncoated flour particles.

If the fat is too warm and soft, oiliness could result, allowing the escape of the fat from the dough both before and during baking. This would result in a dry and tough product.

Although Butter shortbread has the better flavour, sometimes it is advisable to replace some of the butter with margarine to extend the working time with the pastry, especially in warmer climates or in production areas with high room temperatures.

This is to handle the dough more successfully and to avoid excessive flour in the pastry.

Replacing fats

When replacing margarine or shortening with butter it is vital to reformulate the recipe, to produce the similar textured shortbread.

The fat content of butter differs mostly to shortenings, which have a higher fat content. It is recommended to check the fat content of a shortening prior to reformatting recipes.

Substituting Butter to Shortening:

Multiply weight of the butter by 0.8: = total shortening

Multiply weight of the butter by 0.15 = total addition of liquid (water or egg)

E.g. 1000 gm butter x 0.8 = 800 gm shortening

E.g. 1000 gm butter x 0.15 = 150 gm liquid addition

Substituting Shortening to Butter

Multiply weight of the shortening by 1.20: = total butter

Multiply weight of the shortening by 0.15 = total liquid subtracted from other liquid (water or egg)

E.g. 1000 gm Shortening x 1.2 = 1200 gm butter

E.g. 1000 gm Shortening x 0.15 = 150 gm liquid subtracted

Eggs

Egg yolks assist the blending and binding of the ingredients. If used in larger quantities they can soften the dough to piping consistency.

If the egg is too cold, then a longer mixing time may be required to bring the dough to a workable consistency. Care must be taken so that the longer mixing time does not result in excessive gluten formation and development as the barrier is forced or broken down.

The stability provided by the egg white does not cause toughness or shrinkage, as opposed to gluten, which would have an adverse effect.

Baking powder

Baking powder is an optional ingredient and is used to open the texture of the pastry.

Water

Eggs can be substituted with water but this will produce a less rich pastry.

Flavourings

Flavourings which may be used include salt, vanilla, lemon and cinnamon, the choice depends on the desired end product. Ground nuts and almond or cocoa can also be used.

NOTE

There are a variety of short pastry types, and their consistency and handling characteristics are governed mainly by the amount of fat in the mix, the grade of sugar used, the replacement of flour with nuts or crumbs, and the way in which the ingredients are processed to incorporate the fat. Varying levels of moisture can affect consistency. Higher amounts will inevitably produce toughness, as the flour is more likely to come into contact with the moisture and form gluten.

Prevention of gluten formation during mixing and processing is a very important factor in short pastry production.

Many of the problems attributed to poor quality products are directly associated with incorrect handling and processing techniques.

Temperature of ingredients should be held at 16 to 21°C, which will assist in the mixing process and consistency of the pastry and avoids fat lumps.

Pastry made with butter should be produced the day prior to usage.

Key points for Short pastry

- Do not over mix or over handle
- Avoid excessive flour dusting
- Addition of scrap pastry up to maximum of 10% to virgin pastry.

Methods of production

The basic method for short pastry has some variations, each designed to prevent moisture coming into direct contact with the flour, therefore producing a “short” pastry.

Rub-in method

With this method, the fat is rubbed into the flour, coating the flour grains, and preventing them from taking up moisture thus preventing the formation of gluten.

The liquids, sugar, etc. are then carefully incorporated to form soft dough.

Too much mixing, or the use of too much pressure at this stage, could result in the breakdown of the fat barrier allowing moisture penetration.

Blending or creaming method

This method has variations in the way in which the fat is incorporated, but in each case the objective remains unchanged.

The fat and sugar are either creamed or blended to a paste. Then the liquids are added carefully so that they become suspended and evenly dispersed.

This dispersion enables the balance of the flour to be added without coming into direct contact with them.

Highly physically aerated formulae, such as Viennese or biscuit dough, are capable of being piped or extruded, whereas a similar ratio of ingredients, made up using the rub-in method, produces a dough which is capable of being rolled with a pin.

Other influences which dictate the final shortness of the product include the solvent or softening effect of sugar on gluten.

It must also be remembered that dissolving sugar creates liquid, and therefore sugar/moisture additions must be controlled, and in the correct sequence.

Flour batter method

This method is the only method ensuring the complete dissolving of the sugar. Cream fat and half the quantity of flour, mix all the sugar and liquid and clear through. Add remainder of flour and clear.

Puff pastry

Definition

Puff pastry is made up of hundreds of alternating layers of fat and dough.

As the name implies, puff pastry will puff up in the oven to produce a light flaky crisp type of product, it does not contain any leavening agent or baking powder, but can rise up to eight times of its original size. The pastry is suitable for sweet and savoury products, as it does not contain any sugar.

Lamination aeration

Lamination aeration is the rolling and folding of pastry so that individual layers of fat and dough are formed.

The fat turns into oil when the pastry enters the oven; it keeps the layers of dough separate. The water in the dough turns to steam and forces the layers of fat apart by its pressure.

Ingredients

Flour

It is necessary to use medium strength flour, which will give a gluten structure of reasonable elasticity.

Flour with a high gluten protein level will produce a tough pastry, which is prone to breakdown of dough layers during rolling and folding.

This factor is of extreme importance when power rollers are used, as this process tends to increase toughness.

Fat

There is little doubt that the best quality puff pastry is made using butter, due to the melt in the mouth quality, as butter has a low melting point.

This, however, causes many handling problems due mainly to the low melting point of butter, and its rather unstable consistency.

The use of weaker flour, resulting in dough of softer consistency may overcome this problem, but mostly tight temperature control of the butter will adjust the consistency to be the same as the flour mixture.

The flavour of pastry made by this method may well justify the trouble taken. In some instances, a small percentage of flour is combined with the butter, to increase its handling capability.

Pastry fats and margarine which are made especially for puff pastry are produced from high melting point oils and fats. They have good spreading and moulding characteristics (i.e. they plasticise).

The high melting point slows down its absorption into the dough layers until they have begun to set. The use of these fats enables the baker to produce pastries of attractive appearance, and good volume. The only detrimental effect is that there is often a waxy taste left in the cooked pastry (palate cling).

This is due to the fact that the body temperature in the mouth is not high enough to melt the fat in the crumb.

There are a number of different products available to the baker for puff pastry manufacture. Some of these are margarines and emulsions containing up to 20% water, whilst others are 100% fat.

The quality of fat used in puff pastry can vary from method to method and is not critical provided that there is enough present to insulate the dough layers.

The amount used can vary from 50% to 100% of the flour weight. For the best results when using lower quantities, fewer turns may be given, but will result in a slightly reduced and more irregular lift.

The type of pastry is usually defined by the amount of fat used, for instance:

Full pastry: 100% of fat based upon flour weight

- Used for very light and flaky products, like Vol au vents or Bouchees.

Three-quarter pastry: 75% of fat based upon flour weight

- Used mostly for all general puff pastry items, products like cream horns, turnovers or fruit bandes.

Half pastry: 50% of fat based upon flour weight

- Used mostly for products where little lift and flake are required pies, pasties, palmiers or slices.

Margarine

As already explained, the margarine separates the layers of puff pastry dough. Therefore it must be a margarine that is extremely extendable, so that the layers can be reduced sufficiently in thickness to permit rapid expansion of the gluten. The margarine must also be a non-sticky type that doesn't penetrate the dough layers.

If the margarine penetrated the dough, the layers would be "shortened" and the puffing effect restricted. Puff pastry margarine must also act as a frying medium. Because each dough layer is separated by a margarine layer, the heat of the oven causes the dough layers to fry. This helps to produce the ideal crisp, flaky texture.

During this same process, the expanded gluten becomes shortened by the margarine, and this further improves the flavour and texture of the finished pastry.

As the flour starch gelatinises, it takes in melted fat, which stays in the crumbs, producing soft eating quality.

Salt

Salt is mainly added to enhance the flavour and taste. It works stabilising on the gluten structure and it increases the shelf life, as it suppresses bacteria activity. If the fat is already salted, further addition is usually unnecessary.

Water

Water is added to the pastry at the rate of approximately 50% the flour weight. This is variable, according to the water absorption rate of the flour.

Water binds the dry ingredients together and enables the development of the gluten in the flour. It provides a source of steam during baking to help make the pastry rise.

Colour

Yellow food colouring is sometimes used to improve the colour of the pastry; some recipes are also made with eggs to enrich the pastry.

Puff pastry is usually made without any colouring, as the pastry is usually egg washed prior to baking.

Lemon Juice, Vinegar or Cream of Tartar

Acids have a toughening affect on gluten and are sometimes used for this reason, it also prevents natural discolouration of the dough during storage.

Temperatures and equal consistency of dough and fat; if butter is used to produce high quality puff pastry, refrigeration is necessary to keep the pastry cool and prevent the butter from softening. This is to ensure that the fat and dough layers are even.

If the fat is too cold or too hard, breakage of the fat layer occurs during rolling of the pastry. This would result in a detrimental effect upon the volume of the product. If the fat is too soft, it will be squeezed out during rolling and a formation of even layers impossible. Ideal temperature for fat is 15°C – 20°C, but this also depends upon the temperature of the production area and the time taken rolling the pastry.

For successful lamination it is important that the following precautions are taken:

- Do not roll pastry out too thinly when folding as the dough may be over-extended, causing it to fracture
- Give sufficient rest periods between folds to allow the gluten to fully relax
- Use medium strength flour for dusting purposes, brush off any flour during the lamination process, prior to folding
- Keep the addition of trimmings to a minimum. Use relaxed trimmings to a maximum of 10% of virgin pastry.

If using a dough-brake, reduce the block to the required thickness very gradually, as forcing through the rollers will quickly break down the structure.

Methods of making puff pastry

All production processes have one important factor in common–they depend for success on the separation of dough layers by fat layers. The same recipe is used for each method. The main processes for making puff pastry are distinguished by the means by which the fat is incorporated. These processes are:

- **French and English** *roll-in method* -flour/water dough are made and the fat is layered and rolled in, following a specific process. This method is producing a pastry that is fine and even, it is mostly used for products like Chaussons, vol au vents and Pithiviers
- **Scotch** *chop-in method* - the fat is incorporated during the dough mixing process and is dispersed roughly through the dough. This method produces a more flaky pastry, as compared to the above method. It is only suitable where scrap pastry would normally be used, especially for pies, cream puffs or fleurons.

English method

- Mix the dough ingredients until smooth
- Mould into a ball, cover and rest for 20 - 30 min (relaxes the dough – Proteolytic Enzyme action)
- Prepare the fat to the same consistency as the dough
- Pin out the fat to a rectangle
- Pin out the dough to a rectangle 1/2 as long again as the fat and 3 - 4 cm wider, brush off any flour
- Place the butter or pastry margarine on top of the dough, as in diagram 1.

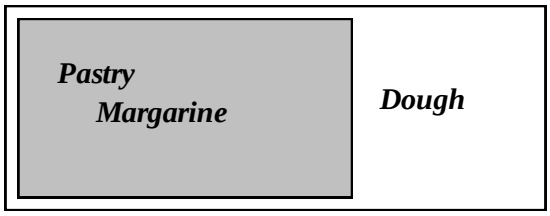


Diagram 1

Brush any flour of the dough which has no fat on it and fold it over onto the portion which is covered with the fat, as in diagram 2, then fold the dough with the fat uppermost over (diagram 3 shows the side view at this stage.

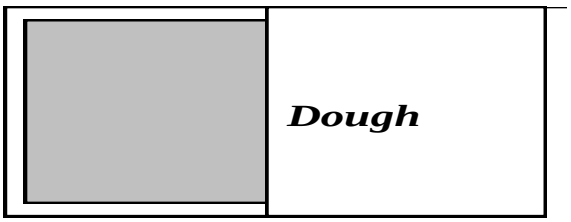


Diagram 2

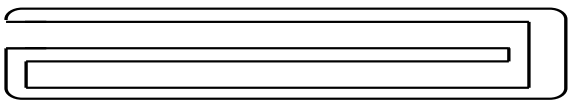


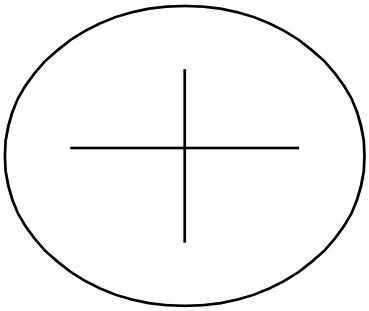
Diagram 3

Pin the dough out to +/- 5mm thickness and give the required number of half turns or book folds with the appropriate rests in between turns.

French method

Mix the dough ingredients until smooth.

Mould into a ball, cut a cross on top, cover and rest for 20 - 30 Min (relaxes the dough - Proteolytic Enzyme action).



Prepare the fat to the same consistency as the dough and shape it to a square.

Pull down the points forming the cross and pin out the dough to form a star or square, brush off any flour.

Place the fat on top of the dough, as in diagram 2.

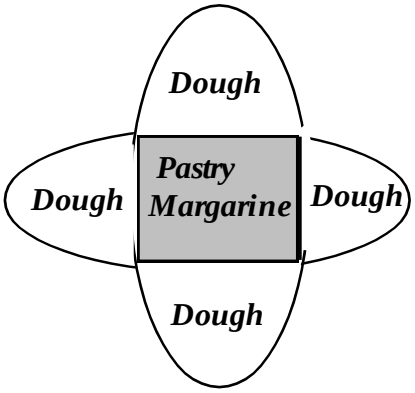


Diagram 2

Brush off any flour of the dough flaps and fold them over onto the fat making sure to envelope the fat in well.

Using a rolling pin carefully, with even pressure, roll out the dough into a rectangle.

Pin the dough out to +/- 5mm thickness and give the required number of half turns or book folds with the appropriate rest in between turns.

Scotch (Blitz) method

- Cut the pastry margarine into cubes and add to the dry ingredients
- Add the water and mix the dough until it has just cleared (it should still have lumps of fat showing) Do not develop
- Form into a rectangle or square and brush off any flour
- Pin the dough out to +/- 5mm thickness and give the required number of half turns or book folds with the appropriate rests in between turns.

Alternate Method

- Cut the pastry margarine into cubes
- Mix the dough ingredients until smooth
- Add the pastry margarine cubes and mix the dough until it has just cleared (it should still have lumps of fat showing)
- Form into a rectangle or square and brush off any flour
- Pin the dough out to +/- 5mm thickness and give the required number of half turns or book folds with the appropriate rests in between turns
- Resting, rolling and cutting out of pastry.

Whatever method of rolling and folding is used, the pastry block is subjected to a large degree of stretching, which builds up tensions in the block. For this reason, it is important that with each rolling and folding operation, the pastry is rolled in the opposite direction. This will result in an even tension in the pastry with more even shrinkage in the oven, reducing the possibility of misshaped and distorted products.

The number of folds is also important for the following reasons:

- Too few folds will result in irregular and uneven lift, and the loss of fat during baking
- Too many folds will cause the layers to merge, resulting in a breakdown of lamination and a shortening of the structure.

Provided that proper resting periods have been given during processing, it is not necessary to rest the cut out pieces prior to baking.

Puff Pastry Turns

There are two types of turns given to Puff Pastry.

- Half Turns (Single)
- Book folds (Double).

Note:

The production method is irrelevant to the lamination process.

The number of turns given to puff pastry is determined by the desired lift and eating quality of the final product.

Final turned puff pastry should achieve 100 to 2500 layers of fat in the dough. These layers can be achieved by using half turns, book folds, or a combination of the two.

Half Turns

Puff pastry made with ½ turns requires 6 half turns.

The pastry is first pinned out to 5mm thick and kept as a rectangle, this is very important for even layering.

Fold 1/3 of the pastry over, as in the folding in of the fat for the English Method of incorporating the pastry margarine (diagram 1).

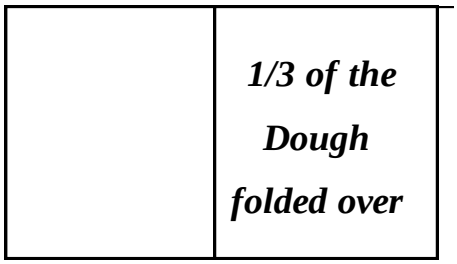


Diagram 1

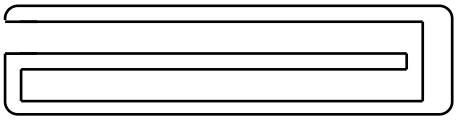


Diagram 2

Repeat this again having turned the pastry around so that the two open ends are towards and away from you (the ends should look as in diagram 2.

Cover and rest in the fridge for 20 - 30 mins.

Repeat the whole procedure another two times to give six half turns, with the correct resting times after every two half turns.

Book Folds

Puff pastry made with Book folds requires 3 book folds

The pastry is first pinned out to 5mm thickness and kept as a rectangle, this is very important for even layering.

The two opposite ends are folded into the centre.

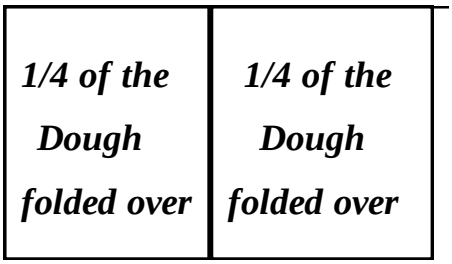


Diagram 1

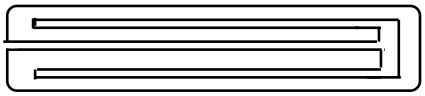


Diagram 2

Repeat this again having turned the pastry around so that the two open ends are towards and away from you.

Cover and rest in the fridge for 20 - 30 mins.

Note:

If Puff pastry is to be refrigerated over a period of time, it should receive the last turn, prior to making it into units.

Puff Pastry with a combination of half and book turns require 2 half turns and 2 book folds.

How puff pastry aerates

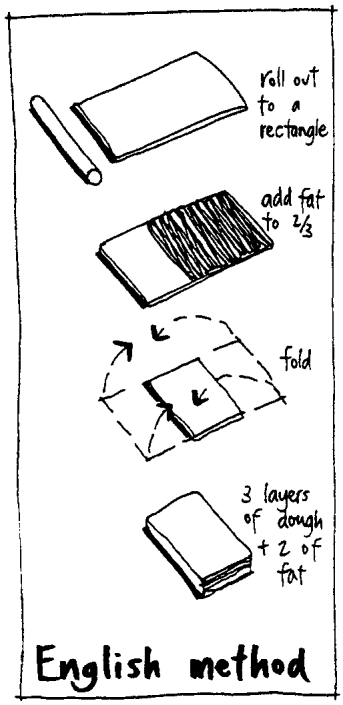
The expanding property of gluten is important in the baking of puff pastry. In the paste, before baking, there is a laminated structure consisting of thin layers of dough separated by thin layers of margarine.

In a very hot oven, these dough layers or a very large number of them “blow up” or “blister”.

As each layer is separated from its neighbour by a margarine layer, the cumulative effect of the layers expanding and the pressure of steam results in the puff paste growing in size, until eventually the gluten sets and holds the pastry article in the expanded state.

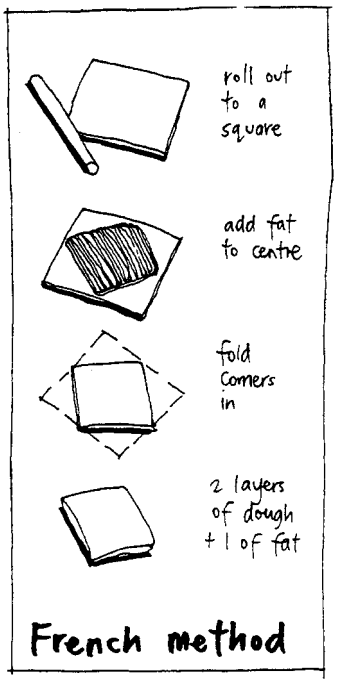
It is essential to have the dough layers very thin and the oven temperature high so that the water can be converted quickly into steam before the gluten coagulates or sets.

The English method



1/2 Turns	Butter Layers	Dough Layers
At Start	2	3
1	6	7
2	18	19
3	54	55
4	162	163
5	486	487
6	1458	1459
Total Layers		**2917**

The French method



1/2 Turns	Butter Layers	Dough Layers
At Start	1	2
1	3	4
2	9	10
3	27	28
4	81	82
5	243	244
6	729	730
Total Layers		**1459**

Activity

Observe a demonstration of the production process for Puff Pastry.

Produce Puff Pastry using the English and French method.

Puff Pastry 3/4 puff

Item	Ingredients	Weight (gm)	Method
A	Plain Flour	1500	
	Salt	20	
	Water	750	
	Lemon Juice (optional)	20	
	Margarine (soft)	125	
B	Puff shortening	1000	
	Or Butter		
	Total	**3395**	

If using butter to produce this dough it is advisable to make the dough and chill in cool room overnight.

This will help to keep the butter cool while the 'turning process' takes place.

Especially in warm climates the dough needs to be chilled.

If this is not possible then use only 'Puff Pastry shortening'. This has been specially developed to have a high melting point of 45°C.

Recommended that students do both styles:

- French
- English.

Both have different characteristics.

English method

- Mix "A" to a smooth dough and rest covered for 15 minutes
- Ensure that fat and dough are of the same consistency
- Shape the butter to a rectangle (30 x 40 cm)
- Roll the dough out to 30 x 60 cm and place the fat onto it, leaving the dough 1/3 uncovered
- As shown on previous page
- Fold the remaining pastry onto the fat and fold in half again, so that there are 2 layers of fat and three layers of pastry (Half turn)
- Repeat the half turn another five times, while changing the rolling direction after each turn. (Keep the open ends towards and away from you when rolling out, ensuring excessive flour is removed after each turn)
- Rest for 30 minutes after every 2 half turns
- After 6 half turns Puff Pastry is completed
- Rest for 30 minutes before use.

French method

- Mix "A" to a smooth dough and rest covered for 15 minutes
- Ensure that fat and dough are of the same consistency
- Shape the butter to a square (30 x 30 cm)
- Roll the dough out to 45 x 45 cm and place the butter diagonally in the centre of the dough
- As shown on previous page
- Fold over each corner of the dough to meet in the centre completely enveloping the fat
- Roll the dough out to 30 x 60 cm. Give half turn
- Proceed as for English Method.

Docking

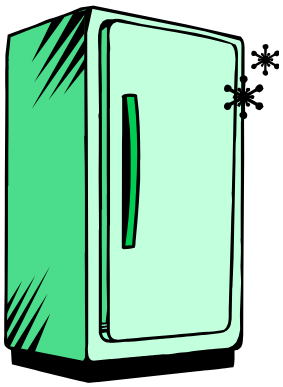
This is placing lots of holes into the puff pastry dough with a special hand machine or using a fork.

Pastry items are docked to:

- Reduce volume, as in puff pastry
- Allow air to escape from under blind baked pastry cases, e.g. flans.

Do not dock pastry cases if liquids are going to be the filling, e.g. Egg Custard, as it will leak out through the holes.

Storage of puff pastry



When pastry is made up on the day before use, it is a good policy to leave the final fold until ready to use.

The stored pastry should be covered to prevent skinning, and stored in a cool place.

The best material for this is plastic sheet, which is impervious to air and can be washed frequently, and is more hygienic than other coverings.

Puff pastry can be kept indefinitely in a deep freeze.

To defrost, it can be removed from the freezer and left in the bakery for at least six hours.

It may also be placed in a refrigerator overnight where it will keep in a useable state for up to two days.

If refrigerated or frozen, the pastry will require bringing to certain temperature before rolling; depending on the fat which was used.

When it is brought back to required temperature, it should be used as soon as possible.

If the raw pastry is kept at above refrigeration temperature, production of acids formed by bacteria will cause sourness to develop and make the pastry unsuitable for use.

Choux Pastry

Definition

The word 'Choux' is of French origin and its literal meaning is 'Cabbage-like.'
Visually, a cream puff has a cabbage-like appearance due to the typical rough surface texture.

High quality items of good volume and fine internal walls prepared from a base panada that, when sufficiently cooled, has the addition of whole egg which is responsible for producing aeration during the baking process.

Choux pastry, also known as 'Cream Puff Pastry, has a wide application range, it can be deposited as; fancy fine scroll, lattice, bulbs, fingers and a range of decorative units. It is used as a basis for confections, gateaux, ornaments, as savoury cases for fish, meat and other fillings.

Due to the bland flavour characteristic of choux paste it can be used for containing an extensive range of plain, fancy or decorative savoury and sweet fillings finished as single or multi-grouped units.

Choux paste also readily blends with a range of finishing materials, examples being: fondant, glace icing, chocolate, ganache icing sugar, slightly caramelised sugar syrup, prior to bake grated cheese, herbs and spices may be used to enhance end product qualities.

Cheese is often added into the mix for savoury products, to enhance the flavour.

The production process for choux pastry is unique as in no other product, with the exception of boiled short pastry, is the flour starch gelatinised prior to baking.

Ingredients

Choux pastry is made from four simple basic ingredients – water, fat, flour and egg.

Flour

Medium strength flour is most suitable, due to the protein content. Although the flour proteins are denatured in the preparation of the panada, a reasonably high level of this coagulated protein must intermingle with the egg protein to provide the structure necessary for expansion during baking.

Fat

Butter is often recommended as the ideal fat for choux pastry; however, many choices are available.

There is a popular perception that the firm fats such as shortbread or pastry margarines produce a more stable batter, which therefore results in better products, but these fats leave a fat cling to the palette, due to their high melting points.

Therefore it is really a matter of personal choice and taste what fat to use.

Water/Whole Milk

Water/Whole Milk are both used in a particular formula to:

- Scale the flour
- Partially gelatinise flour starch
- Partially coagulate flour protein
- Act as a moistening agent
- Adjust panada consistency
- Provide moisture generation during the baking process.

Ratio of these two ingredients is most important because tests on formulae with high liquid ratio in base panada resulted in thick tough dense walled products.

In contrast low ratio of formula liquid in the panada results in misshapen products.

Egg

Whilst egg pulp is suitable, fresh eggs are considered ideal due to the greater stability of the albumen, essential to the aeration process for this product. If frozen egg pulp is used, it needs to be used after thawing and at a moderate temperature, for increased stability.

Eggs are essential because they provide:

- Moistening
- Aeration adjust paste consistency
- Flavour and influence eating qualities
- Structure and determine character of product
- Unique bases for this type of trade product
- Provide moisture for steam generation during the baking process
- Base for both sweet and savoury type product.

Sugar

Sugar rarely used in most formulae; purpose for use would be to assist crust colour and impart a negligible degree of product tenderness. Application would be for produce intended on sweet complement finishing.

Salt

Salt is rarely used in choux paste lines, infrequently it is contained as a formula ingredient in produce intended for savoury complement finishing.

A general disadvantage could be seen in that it has an effect of tightening protein structure.

Chemical Aerating Agents

Chemical Aerating Agents, the use of baking powder appears well established. Its importance is one of having a slight opening effect of produce structure.

Traditional method found that 'Vol' was used in common practice. This type of aerator (Ammonium bicarbonate) works well in choux paste conditional that it is used in precise amounts.

A disadvantage is that slight excess can cause internal discolouration, off odour, unpleasant eating quality and distortion of goods.

Because baking powder does not require the same precise quantity and that it is more commonly found in all trade production, its use is more widespread.

In certain formulae, additional ingredients may be required.

These materials are more generally used to complement and enhance flavour of the final product, e.g. Vanilla, Mace.

Choux paste is versatile in setting in that it can be:

- Baked in an oven
- Deep fried
- Poached in hot water for small savoury lines.

Method

The water is brought to the boil with the fat.

The flour is sieved and added to the boiling mixture, while on the heat, and is stirred in very quickly to prevent lumps forming, this is known as a panada.

The mixture needs to be heated until a smooth shiny mass is formed, which leaves the sides of the saucepan. The cooking or heating of the panada is vital to gelatinise the starch, which occurs when starch grains take up moisture; swell, burst and form a gel with the water (thicken).

To gelatinise starch; temperatures of minimum 78°C to 80°C are required.

Cooked panada should be removed from the stove as soon as it reaches the desired temperature, to prevent burning.

The mixture is now cooled to below 50°C, on a table; by spreading it out to give a larger surface area so that it cools quickly or by stirring it on slow speed in the mixer for a few minutes.

The correct addition of egg is important, and should not be done too quickly, as complete incorporation at each addition is critical.

To ensure even distribution of the egg, it is necessary to repeatedly scrape down the bowl. If the batter is too slack, it will run out on the baking sheet before and during baking, the resulting products lacking volume, and often being difficult to dry out sufficiently in the oven.

On the other hand, if the batter is too firm, it will create too much resistance to steam pressure, and the low moisture content will lessen the production of steam in the product.

Both of these factors result primarily in loss of aeration in the oven.

The aim is to produce stable, but smooth dough with a 'silky' texture. It should be firm enough to retain its shape when piped or deposited.

Clean trays should only be very lightly greased. It is important that the base of the product actually grips the tray.

This 'holding down' allows for greater expansion of the product without forming hollows in the base, which can distort their shape, (particularly Éclairs, where an upturned banana shape is common). Silicone paper will defeat this purpose and is not recommended.

Baking conditions vary with the product, however it is generally accepted that a moist environment is best suited to products which require maximum expansion (e.g. Cream Puffs), whilst a dry heat is best for Éclairs, Profiteroles etc., where a smooth surface is a requirement.

The baking conditions are controlled with the use of the damper, or by covering the products during baking.

It is important that the oven is not opened until the product has set or coagulated, as this may cause the product to collapse.

Choux pastry can also be fried and at a temperature of 180°C. These items are called beignets and are normally filled with sweet or savoury fillings and served hot with an accompanying sauce.

Piping Choux Pastry

Choux paste is commonly piped onto very lightly greased baking trays. Only a slight smear of fat is required to ensure good tray adhesion by the paste.

Well-greased trays cause produce to slip during piping and presents considerable difficulty in both speed of depositing and piping efficiency. Release of the paste on well greased trays is difficult because there is a tendency for the paste to lift and not break clean.

Depositing should be practised with a large Savoy bag with a half bag split to improve flow control, secure desired shape and develop speed of depositing. (With bulbs and rounds the bag is held vertically with the diameter of the nozzle just above the surface of the tray).

Paste is extruded with a gradual lifting of the bag until a bold, distinctive shape and required size is formed.

The desired shape should be retained with a clean sharp lift or cut-off being achieved. Tails must be avoided; also, irregular volume to either side, symmetry is most essential to quality products.

Fingers are deposited with the nozzle held in contact with the tray and at an angle of 45 to 60 degrees. Uniform pressure must be applied to secure a uniform, consistent and straight appearance to the finger.

Cut off should be made with a slight release of pressure and slight reverse of direction of nozzle travel with a clean lift to secure a uniform line of paste.

Spacing of items is most important to retain individual items or a distinctive shape to other variety goods.

Regular well placed depositing will ensure best use of baking space and achieve quality appearance to final products.

Close and irregular spacing will not give best results to items because baking will not be either uniform or consistent.

Skill must be developed to secure optimum produce results with both speed and efficiency. Attention must be given to:

- Required depositing technique
- Correct size of item
- Uniformity of items on the same tray
- Clean, sharp and distinctive shape
- Uniform and consistent spacing on trays
- Consistent lines of depositing (travel of nozzle).

Ensure that there are no air bubbles in the batter when piping; this could cause breakages and inconsistency in the piped fingers. Remember that consistency of size is very important, particularly for even baking.

Some professionals prefer to use a star tube for piping éclairs, and whilst this will produce a decorative surface, it does not produce the smooth surface, which when iced, has the finish usually associated with the traditional éclair.

In English text books, éclairs piped in this fashion are called 'Leopolds' and are sprinkled with coarse sugar prior to baking. They are then split and creamed when cold, requiring no further finishing.

Baking

Traditionally choux paste was baked in enclosed containers that allowed steam to be evaporated from the baking items and assist the baking process. This practice allowed maximum volume with an open porous thin walled finely structured product.

Improved volume and quality characteristics of choux paste goods are attained with steam utilisation during the initial baking stage.

Advantage to certain paste produce has been found by baking items with lines such as sausage rolls, puff pastry goods or yeast goods.

Excessive steam must be avoided or grossly misshapen products will result. Another practice is (where possible) oven dampers are closed for the initial baking period to allow optimum volume to be attained.

Required oven temperature will vary according to variety of choux paste produce. In general, high oven temperature is advised between 210°C and 230°C.

- Low oven temperature prevents items reaching optimum volume prior to setting and hence products have dense heavy quality with thick under baked walls
- Excessive oven temperature will also cause poor shape, lack of volume, and under baked thick dense walls.

Baking times will vary according to a number of conditions:

- Size and shape of items
- Uniformity of depositing
- Type and distribution of oven heat
- Recovery temperature of oven
- Damper control
- Capacity of the baking chamber.

Storage

Choux pastry should be open inside with a dry outer shell. A small amount of water should remain inside the shell to prevent brittleness and the possibility of cracking in storage.

Baked shells can be stored in a protected cool environment for up to one week, or may be deep frozen. Freezing is best done soon after the product is baked as it is important to retain a percentage of moisture for satisfactory results. Products which are very dry will crumble and break very easily when thawed. To achieve crisp products, baked frozen may be baked again.

Factors Controlling the Volume

When choux paste is being baked, any air that has been beaten into it will expand and the water in the paste will be converted to steam. The expanded air, as well as the steam, tries to escape from the paste but to a large extent it is prevented from doing so because both are trapped and retained within the paste by films of coagulated flour protein and uncoagulated films of egg albumen.

The egg albumen is extensible and will be inflated and distended by the internal pressures – air and steam. Thus the pastries increase in volume, and expansion only ceases when the egg albumen films lose their extensibility and gas holding powers.

However, the moisture which is near to the surface of the paste is driven off fairly quickly, after which the temperature of this outer layer of paste can rise well above the temperature of boiling water.

During the latter part of this period and as the paste has already reached very considerable volume, the egg proteins are coagulated and set. The natural sugars from the flour will soon begin to caramelise to a rich brown colour when the moisture has been driven out of the surface layer of paste of an éclair case or puff shell.

Whatever the strength of the flour, protein will have been coagulated during the preliminary cooking of the water, fat and flour which occurs prior to the addition of eggs in making choux paste. The gluten, therefore, will have lost both extensibility and gas-holding powder.

The presence of strong films of uncoagulated egg protein in the paste at the moment that it is placed into the oven to bake is of the utmost importance for the achievement of satisfactory volume in choux pastries.

Savoury Short pastry

Savoury short pastry is mainly used for quiches, pies, biscuits, savoury tartlets and cheese fours.

The difference between sweet short pastries is the sugar content, which is little or none in savoury pastry. Due to the softening effect of sugar, savoury pastry tends to have increased gluten development, which increases the possibility of shrinkage during baking.

The main ingredients of savoury short pastry are fat and flour, usually at a ratio of:

- 2 fat 3 Flour; or 1 fat 2 flour; other ingredients are eggs, salt, water or milk. Please refer to the notes in Sweet Short Pastry for ingredient functions preparation and production.

For best flavour savoury pastry is mostly or partly made with pig lard.

Methods of savoury pastry production

Note: The same recipe can be used for all methods.

Boiled: This method produces a very brittle short pastry; traditionally it is used in the production of Pork Pies.

Boil water with salt and lard, ensuring that the fat is melted. Pour the boiling water directly into the sifted flour and mix to a paste. Once the pastry is cool, it is ready to use.

Note:

This method is only very rarely used, as the hot method makes a better pastry.

Hot: This method produces a shorter eating quality pastry than the boiled method. Rub the flour and fat into a crumble. Boil water and salt. Pour boiling water mix over the flour and fat mixture and combine, cool and use.

Cold: All methods as for sweet pastry production can be used. The method described is the best suitable.

Rub lard and flour into a crumble, mix cold water and salt, pour onto fat and flour mixture and mix until cleared.

This method is used for Cornish Pasties, Quiches, Tartlets and Barquettes.

Reasons for boiling water or water/fat mix

The reason is to gelatinise some of the starch, which enables the paste to take on more crust colour.

The heat melts the fat and as the paste cooks, the fat sets more firmly than it was originally and helps to hold the shape of the pork pie (pork pies are traditionally baked without tins or hoops).

This prevents the pies collapsing when they are first placed in the oven. It provides sufficient structure long enough for the crust to form during the early stages of baking.

The other advantage is that the gelatinised starch gives greater plastic properties to the paste enabling the pies to be raised more easily.

Strudel and Filo pastry

Little History

Filo pastry is believed to have originated in East Asia, but in modern times the Greeks have claimed it as their own. A slight change by the Hungarians to the recipe formula and in the production method developed the strudel pastry.

Strudel was made famous by the Austrians, who understood the production of specialty fillings and created pastries, like no others. Even in today's time Viennese Strudels have worldwide reputation.

Definition and Production Method of Pastry

The basic water-pastry is made from medium to strong flour and water, with the addition of eggs, oil and/or cornflour in some cases.

The dough is mixed to full gluten development, well rested, and then stretched out to wafer thickness, without breaking.

Many experts in Strudel making like to demonstrate that the pastry is thin enough if it is possible to read the print of a newspaper through the dough.

A piece of dough weighing 1.7 kg should cover an area of 1.5 to 1.8m.

Although filo and strudel pastry are not exactly the same, they are interchangeable. Both of the pastries have the same outcome, to produce a pastry simular to puff pastry, crisp and flaky when baked.

The difference between puff pastry and filo or strudel pastry is that the fat is brushed or sprayed onto the stretched dough in comparison to rolling and folding the fat layers.

The principle of lamination aeration is the same as for puff pastry.

In today's time a wide range of commercially produced filo pastry is readily available.

In commercial manufacture of filo pastry the extrusion method is used, followed by a cutting devise.

This filo pastry comes in paper thin leaves, it is available fresh (refrigerated) or frozen, with excellent shelf-life to several weeks in the refrigerator.

Ingredients

Flour

It is necessary to use medium to high strength flour, which gives a gluten structure of reasonable elasticity.

This is important, in order to be able to pull the pastry out, without breakage.

Water

Water is added to a rate of approximately 50% of the flour weight, depending on the strength of the protein content.

Water binds all the dry ingredients and enables the development of gluten.

Fat

The addition of fat is recommended, as it retains the moisture in the pastry, therefore the pastry does not dry too quickly.

Fat also softens the gluten strand, which enables the pastry to be pulled out paper thin.

Eggs

The addition of eggs enhances the structure of the pastry when baked, due to the coagulation of proteins.

It provides moisture, elasticity and colour in the dough.

Other ingredients:

Lemon Juice: May be used to strengthen the gluten of the flour.

Salt: Works stabilising on the gluten structure.

Corn flour: May be used to weaken the gluten structure for softer eating qualities. Corn flour is also added to weaken the structure to ease the pulling out of the pastry.

Strudel Pastry Handling Techniques

To stretch the pastry without tearing the following points should be followed:

The ideal pastry should be soft, covered with oil (prevents skinning) and lukewarm for the ease of stretching.

Use lightly floured hands and surfaces to prevent sticking.

The pastry is usually rolled out first, and then stretched by laying it over the back of the hands (circulating it in a horizontal motion).

When the paste is too large to handle it is placed onto a floured table cloth and anchored to a corner of the table to ease the stretching.

It is now again stretched carefully using the back of the hands until it is wafer thin.

The thicker ends are cut off, prior to adding the filling. The scrap pastry could be used for dumplings in soups.

Splitting or tearing is prevented by using lightly floured hands and by working the paste quickly, to avoid drying out.

All rings should be removed from the fingers to reduce the possibility of snagging the paste.

3.1 Select required commodities according to recipe and production requirements

Ingredients for recipes

All Pastry has base ingredients of flour and water.

Better quality pastry also has a fat added to give eating qualities. Salt can be added to give strength to gluten structure and adds to the flavour

Sweet pastry has an addition of sugar but this has effects on the gluten that needs to be controlled by altering recipe ratio

All these pastries have a closed consistency and after they are baked are very heavy in the eating qualities.

Addition of aeration to the pastry achieves better eating quality so giving a more pleasant sensation from consumption.

Aeration can be achieved by the addition of chemical compound (baking powder) or by the addition of fat and different methods of incorporating these fats into the dough give a different result.

The addition of fat also adds to the food value to the dough or batter.

Flour

Strong flour is needed for the production of puff pastry, choux and strudel pastry items while medium or weaker flour is required for the production of sweet short pastry, shortbread and savoury pastry items.

Sugar

Caster or finer grain sugar is preferred for pastry making due to its capacity to dissolve more easily during the baking process.

Salt

Sodium Chloride is used to give flavour and it also has a strengthening effect on the protein structure of the flours making the dough more readily able to be stretched over great distance without tearing.

Fats

Butter is the fat of choice for flavour when making pastries but alternatives are available due to the fact that butter is hard to handle in warmer climates due to its low melting point.

Margarines and shortenings that have a higher melting point can be adapted to all recipes and flavours can be added to give a more pleasant eating sensation.

Eggs

Eggs added to pastries add food value but also add to the cost. Eggs add colour but colouring agents can be used to overcome this issue. Eggs can be fresh or powdered.

Aerating agents

Baking powder is the most common. Adding baking powder will give a more open texture to the pastry and make it easier to eat.

Addition of fats into dough can have an aerating effect on the pastry such as Puff Pastry.

Flavouring Agents

Spices, essences and intensely aromatic liquids can be added to pastry to enhance the eating sensation.

The compulsory standard is that it must be fit for human consumption and give no harmful side effects.

Nuts

All nuts can be used in pastries. Some can be added raw while some have their flavour enhanced by roasting nuts before use.

Milk

Milk can be used. It is can be fresh or powdered. Most commercial bakeries will use it as a dry ingredient, due to convenience of storage and handling.

Ingredients for Fillings in Pastries

Any food can be used as a filling in pastry

The base ingredient in the filling is normally cooked before it is place into the pastry.

- This is due to the fact that the pastry may cook before the filling and that can be dangerous to public health.

If the filling is cooked, the moisture must be stabilised before it is placed into the pastry.

- Filling is stabilised by adding a starch based ingredient that will absorb the moisture and hold it in suspension during the baking process.

Pastries with filling that contain high moisture content need to be cooked quickly so the filling does not boil inside the pastry. If it boils it creates too much steam and breaks the pastry open spoiling the visual affect of the finished product.

Savoury fillings

Vegetables need to be cooked before being placed into pastries due to their high water content.

Meat needs to be small enough pieces to be cooked by the penetrating heat before the pastry is cooked.

Cheese can be used as it is, but the cooking process will have an effect on the eating quality of the cheese.

Sweet Fillings

Fruits need to be cooked before being used in fillings as the water content would spoil the pastry my making it soggy or water logged.

Sugar need to be in a starch gel mix because as it is exposed to any moisture it will dissolve and add extra moisture to the filling and also make pastry soggy.

3.2 Prepare a variety of pastries

Activity

Observe a demonstration of the production process for Sweet Short pastry.

Produce Sweet Short pastry as directed.

Sweet Short Pastry

(Flour - batter method)

Item	Ingredients	Weight (gm)	Method
A	Shortbread Margarine Cake Flour Caster Sugar	320 240 160	
B	Egg #1 Lemon, Vanilla, Salt	60	
C	Medium Flour	240	
	Total	**1020**	

Method:

- Mix "A" to a crumb only
- Add "B" and mix to a clear dough, creaming lightly
- Add "C" and mix until clear (do not over mix).

(Creaming Method)

Item	Ingredients	Weight (gm)	Method
A	Butter Caster Sugar	350 200	
B	Egg Lemon & Vanilla	50 to taste	
C	Medium Flour	500	
	Total	**1100**	

Method:

- Cream "A" together (**do not over cream**)
- Mix "B", adjust temperature and add slowly to "A"
- If added too quickly, mixture will curdle
- Add "C" and mix to a smooth short paste **(do not over mix)**
- Store dough in Refrigerator until set.

Activity

Produce a range of savoury short pastry products, as directed.

Short Pastry

Yield 3 x 22 cm fluted mould:

Item	Ingredients	Weight (gm)	Method
A	Medium Flour Salt Milk Powder	.600 .005 .035	
B	Butter Lard	.150 .150	
C	Water	.120	
	Total	**1.060**	

Method:

- Sieve “A”
- Rub "B" into "A" to a crumbly consistency
- Mix in "C" to a light smooth paste (do not over mix)
- Rest for 30 min before use.

Note:

Medium flour may be replaced with soft flour and baking powder may be added to lighten the texture of the pastry.

This pastry is also used for sweet flans and pies (Apple Flan) If used for sweet pastry, Lard needs to be replaced with butter or shortening.

Activity

Observe a demonstration of the production process for Puff Pastry.

Produce Puff Pastry using the English and French method.

Puff Pastry - 3/4 puff

Item	Ingredients	Weight (gm)	Method
A	Plain Flour	1500	
	Salt	20	
	Water	750	
	Lemon Juice (optional)	20	
	Margarine (soft)	125	
B	Puff shortening	1000	
	Or Butter		
	Totals	**3395**	

English method

- Mix "A" to a smooth dough and rest covered for 15 minutes
- Ensure that fat and dough are of the same consistency
- Shape the butter to a rectangle (30 x 40 cm)
- Roll the dough out to 30 x 60 cm and place the fat onto it, leaving the dough 1/3 uncovered
- Fold the remaining pastry onto the fat and fold in half again, so that there are 2 layers of fat and three layers of pastry (Half turn)
- Repeat the half turn another five times, while changing the rolling direction after each turn. (Keep the open ends towards and away from you when rolling out, ensuring excessive flour is removed after each turn)
- Rest for 30 minutes after every 2 half turns
- After 6 half turns Puff Pastry is completed
- Rest for 30 minutes before use.

French method

- Mix "A" to a smooth dough and rest covered for 15 minutes
- Ensure that fat and dough are of the same consistency
- Shape the butter to a square (30 x 30 cm)
- Roll the dough out to 45 x 45 cm and place the butter diagonally in the centre of the dough, fold over each corner of the dough to meet in the centre completely enveloping the fat
- Roll the dough out to 30 x 60 cm. Give half turn
- Proceed as for English Method.

Choux Pastry

Using the recipe below, produce Choux Pastry

Item	Ingredients	Weight (gm)	Method
A	Butter Water Salt Sugar	200 500 pinch pinch	
B	Flour, hard	350	
C	Eggs	+ / - 550	
	Total	**1510**	

Method:

- Boil "A"
- Add sifted "B" into "A" while stirring
- Cook on low heat until the fat /flour mixture loosens from the bottom of the pan. The mixture has to reach 80ºC, for the proteins of the flour to coagulate. Cool down the mixture
- When cool add the eggs slowly, clear mixture after each addition of egg
- Scrap bowl down occasionally
- Mixture has to have piping consistency, it should be soft, but has to be able to hold its shape
- Depending on products most choux pastry goods are
- Baked at 220ºC until golden brown in colour
- Place onto cooling wires on removal from oven.

Activity

Using the recipe below, produce Strudel Pastry as directed

Strudel Pastry 1

Item	Ingredients	Weight (gm)	Method
A	Flour, hard Oil, vegetable	300 50	
B	Eggs	# 1	
C	Water	100	
	Total	**500**	

Method:

- Mix “A” into a crumble, using sifted flour
- Mix "B" and "C" and add to the flour
- Mix dough until clear and well developed
- Mould round and cover with oil and plastic to prevent skinning
- Rest dough 30 minutes before use.

Tin/tray preparation

Tins and trays used for baking sweet short pastries should be clean and free from foreign matter.

The nature of this pastry does not require the use of a releasing agent to prevent sticking.

Greasing of tins can lead to shrinkage during baking, being more obvious in the deeper style pans.

Rolling out or pinning out of short pastry

Shortbread should be blocked into a shape suitable for rolling, and should not be folded, layered or moulded.

Roll carefully with smooth, even pressure on the pin.

Do not hit or bash down with the pin.

- Move the dough piece frequently to ensure adequate dust between it and the table surface
- Do not attempt to move large rolled pieces with the hands, but rather, roll tightly around the pin and move as necessary.

If the dough piece sticks to the table surface during rolling, then continued rolling will only stretch out the top surface, the under surface being held firmly in place.

When hand rolling for a tray sized piece, check progress by placing the tray over the rolled surface to ensure that suitable size has been reached.

Check

Before processing the Sweet Short pastry, further check that:

- The bench surface is level, smooth and clean
- The rolling pin is not damaged or pitted, is dry, and has no dry dough adhering to it, and the pin has the correct rolling capacity
- An adequate supply of clean flour is available, and conveniently placed
- Tray, tins etc. are prepared.

Cutting Pastry

When using metal cutters to produce discs from a rolled sheet of pastry, firm pressure on the cutter or a chopping motion may be used.

A slight twist of the cutter will usually cause the disc to stick in the cutter, which allows it to be moved clear of the scrap pastry.

Cut discs should be stacked evenly and not too high to maintain shape and reduce the possibility of distortion.

Large discs, such as those for plate pies should be handled carefully, and not be picked up by the edge, when cracking or breaking is possible.

Activity

Observe a demonstration of the rolling out of sweet short pastry.

Using a manual rolling pin, roll out 150 gm of pastry to an even thickness of 4mm for Shortbread Fingers. Cut the fingers 1.0cm x 5.0 cm. Place them on a clean tray and bake them at 190°C until golden brown in colour (Straw).

The fingers are used to evaluate the different short pastries in texture, flavour and handling properties. Please use the evaluation sheet to compare.

Scrap retrieval

Scrap pastry should always be incorporated into unused dough and not used alone to produce similar products. It will have toughened considerably during rolling and reshaping. When incorporating into fresh dough, this should be done with a minimum of mixing or pressure. Only incorporate a maximum of 10% scrap into virgin pastry.

Lining into tins/foils/trays

The importance of consistency in this operation cannot be over-emphasised.

When discs of a particular shape and size are cut out, it is intended that these pieces will fit neatly into the containers without trimming.

This can be achieved by careful manipulation of the dough piece without distorting it, cracking, or leaving thumb and finger marks on the surface.

Air must not be trapped between the container and the dough, as this will expand during baking and cause distortion. It also reduces the interior volume of the pie or tart.

Fluted edges require very careful handling as they are easily damaged during the lining process.

Floor time prior to baking

Resting time prior to baking is recommended, but under ideal circumstances, a lengthy floor-time would not be necessary except where an excessive amount of scrap pastry has been used.

If a prepared product has been refrigerated or frozen, then it is advisable to bring it back to room temperature before baking, as under-baking, and/or some shrinkage could occur.

Baking

Due to the sugar content, caramelisation is rapid once the crust temperature reaches about 148ºC. For this reason, this type of pastry is baked at a reasonably moderate temperature.

As a general guide the baking temperature for sweet short pastry is 190ºC to 215ºC, furthermore the baking temperature depends on: size and shape, density, the sugar content and product characteristic.

The baking temperature for savoury goods is 200ºC – 230ºC. Savoury pastry can be baked at higher temperatures because of the low sugar content; this also ensures that the pastry is cooked before the filling boils.

Pre-bake finishes: Sweet Short Pastry can be left plain, Egg-washed or washed and sprinkled with sugar to enhance the appearance.

Blind-or Pre-baking of shortbread

When pre-cooked fillings or cold fillings are used, it is necessary to pre-bake the pastry shells.

The main problem with this process is the shrinkage or distortion of the pastry during baking. The absence of a filling provides nothing to hold the pastry in shape.

There are various methods employed to overcome these problems. The more common are as follows:

- Bake on upturned foils or tins
- Sandwich between two foils or tins
- Dock dough pieces well and place in open tins or foils
- Line into tins or foils, cover with foil or greaseproof paper and fill cavity with split peas, rice, beans or similar product.

At a later stage of baking, these second foils or fillings are removed to allow for completion of baking process.

For some shortbread products like slices it is important to pre-bake the bases, which guarantees that it will be properly cooked through, this also shortens the baking time and lessens the possibility of the filling boiling prematurely. The main problem with pre-baking is that there is a possibility of shrinkage at this time, which creates difficulties should the filling overlap the edges of the base.

For pre-baked bases, the pastry should be docked to prevent build-up of gasses under the sheet during baking, which could result in distortion of the base.

Remember

Docking of dough pieces is not satisfactory where a very liquid filling such as jelly or baked custard is used, due to seepage through the crust.

Post Bake Handling

It is important not to damage the product at this very vulnerable stage. Because of the soft nature of the product at this time, careless handling could easily damage it.

Products can be finished with caster sugar, which is sprinkled onto the hot product on removal from oven, or dusted with icing sugar when cold.

Packaging and Presentation

Most short pastry articles in hotels or restaurants are presented on mirrors, plates and/or platters using doyleys and/or petit pans. For articles to take away, it is mostly wrapped in cellophane wrap or bags, as this packaging allows the product to “breathe”. This also retains the quality of the product and increases its shelf-life.

When serving shortbread tarts or pies hot, it is recommended to warm it on the serving dish, as the transfer may distort the product.

Shelf-Life

Unbaked Short pastry has an excellent shelf-life, due to the high sugar and fat content. It freezes very well, but must be protected to avoid freezer burn.

Baked short pastry articles are unsuitable for freezing

Ideally short pastry is baked freshly every day, but it can be stored for longer periods of time if protected from moisture.

3.3 Produce a variety of pastries according to standard recipes and enterprise standards

Product characteristics that customers look for come from the following:

Colour of the product when it is finally removed from the oven is important to the visual appeal of the product. Colour stimulates the senses and encourages the customer to purchase.

Appearance is about form and shape. It is important that all pieces have the same appearance.

Consistency and texture is about how it feels in the mouth when the customer is consuming the product.

Moisture content adds to the shelf life and mouth feel of the product.

Mouth feel and eating properties

This is achieved by maintaining consistency of production. Nobody is allowed to move away from the given formula, shape design.

Recipes need to be followed and each recipe should state the yield from each production run, defining weights and number of units.

To achieve this each product must be moulded the same and must all look the same.

Enterprise standards can be determined by:

- Expectations of customers
- Skill of the artisan pastry cook
- Quality of ingredients used
- Market penetration point established by the enterprise.

Activity

Produce a variety of Sweet Short pastry, using the one of production methods from the recipes provided.

Observe the formula variations of the recipes, the usage of the different pastries and their eating qualities.

Activity

Observe a demonstration of the production process for Sweet Short pastry.

Produce Sweet Short pastry as directed.

Activity

Observe a demonstration of the rolling out of sweet short pastry.

Using a manual rolling pin, roll out 150 gm of sweet short pastry to an even thickness of 4mm for Shortbread Fingers.

Cut the fingers 1 cm x 5 cm.

Place them on a clean tray and bake them at 190°C until golden brown in colour (Straw colour).

The fingers are used to evaluate the different short pastries in texture, flavour and handling properties. Please use the evaluation sheet to compare.

Activity

Using portion the Sweet Short Pastry you have produced.

Produce the following:

Frangipane Tartlets

Yield: 10

Item	Ingredients	Weigh (gm)t	Ratio
A	Sweet Short Pastry	.200	
B	Raspberry jam	.050	
C	Frangipane	.500	
D	Almonds, flaked	.005	
F	Apricot Jam	.050	
	Total	**.800**	

Method:

- Roll out sweet paste to 3 mm thickness
- Line out tartlet or brioche mould
- Pipe raspberry jam into each base (only very little)
- Fill 2/3 with frangipane
- Sprinkle flaked almonds on top
- Bake at 180°C until golden brown
- Brush with boiled apricot jam, while tarts are still warm, or dust with icing sugar when cold.

Frangipane

For 4 students

Item	Ingredients	Weigh (gm)t	Ratio
A	Butter Caster Sugar Lemons Zest Vanilla	.300 .300 1 each to taste	
B	Eggs	.300	
C	Ground Almonds Soft Flour	.300 .040	
	Total	**1.250**	

Method:

- Finely grate the zest of the lemon
- Cream "A" until light
- Add half the quantity of "B" gradually
- Mix "C" and add half to "A" and "B"
- Add remainder of “B” gradually
- Add the remaining flour and almonds and mix until smooth.

Note:

By topping the tart with poached fruit, different flavours and textures are achieved.

This formula for frangipane is also used for the base of upside down cakes.

Fruit Flan

Yield: 10 small

Item	Ingredients	Quantity (gm)	Ratio
A	Almond Short Pastry	.300	
B	Chocolate, white	.080	
C	Crème patisserie	.600	
D	Fruit any fresh and/or poached	As required (600)	
E	Flan Gel	100g	
	TOTALS	**1.580**	

Method:

- Roll out sweet paste to 3 mm thickness
- Line out Flan Moulds
- Following resting time “blind bake” bases at 200°C
- When cold, brush bases with melted chocolate and 3/4 fill with crème patisserie
- Wash, peel and cut fruit
- Arrange neatly on top of the crème
- Glace with flan gel. Sample recipe follows.

Note:

Toasted nuts may be used to decorate the sides of the flan.

Equipment needed for this exercise:

- Rolling pin
- Pastry cutters
- Metal or aluminium foil moulds 2 – 3 cm width
- Baking trays
- Pots hand balloon whisk
- Mixing bowls.

Crème Patissiere (Vanilla Custard)

Item	Ingredients	Weigh (gm)t	Ratio
A	Milk	1.000	
	Vanilla Essence	.010	
	Caster Sugar	.100	
B	Eggs	.200	
	Caster Sugar	.100	
C	Cake flour	.050	
	Corn flour	.050	
	Total	**1.460**	

Method:

- Slit the vanilla bean lengthwise, scrape out the seeds and add into a saucepan with sugar 1; Bring to the boil
- Whisk egg-yolk with sugar and add sifted “C”
- Add half of the boiling milk into the flour mix whilst stirring
- Place all the flour-mix back into the remainder of the boiling milk and bring back to the boil, until it thickens
- Strain crème patissiere through a strainer, sprinkle with caster sugar and plastic wrap, to prevent a crust from forming.

Note:

In some formulae for crème patissiere the corn flour is replaced with custard powder.

Custard powder is corn flour with yellow food colour and vanilla flavour.

Flan Gel

Ingredients:

100 gm	Flan Gel
75 ml	Water

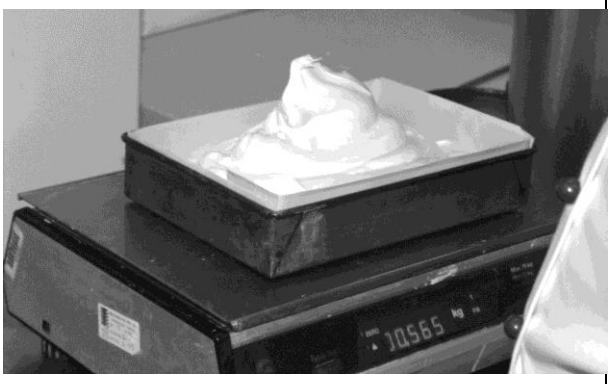
Method:

- Mix together and bring to the boil
- Glace Fruit Flan with “hot” mixture
- Water can be replaced with fruit juice (E.g. apricot brine from tinned apricot).

3.4 Use appropriate equipment to prepare and bake pastries

Equipment may include:

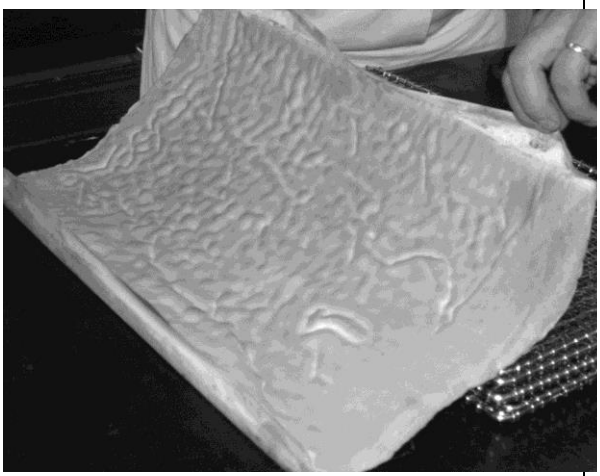
Baking Ovens

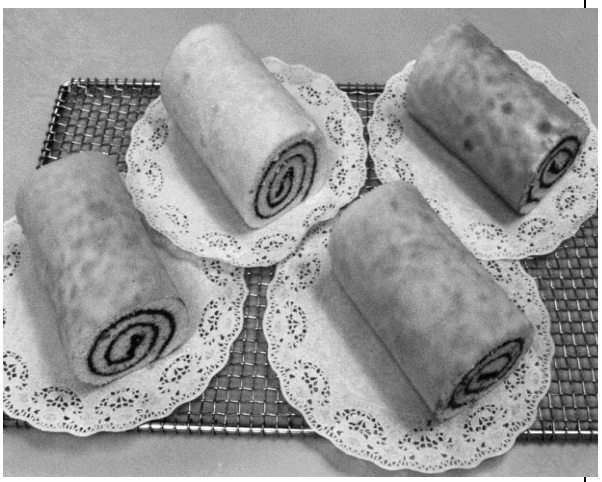


Measuring Scales

Spreading sponge batter on papered tray

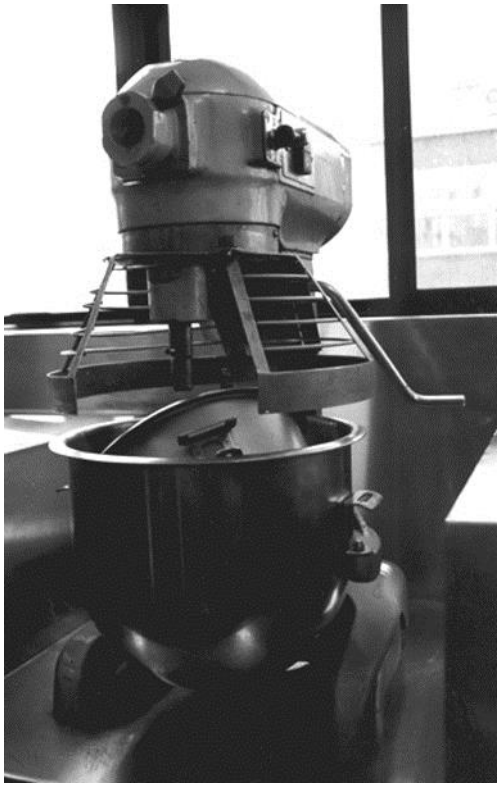
Sprinkle sugar on baked sponge sheet

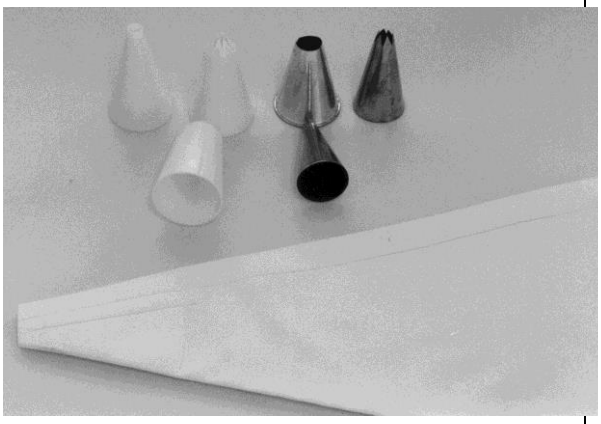




Removing baked sponge sheet from tray

Rolled Swiss roll





3.5 Use correct techniques to produce pastries to enterprise standards

When a customer purchases a product from bakery it is based on 2 reasons;

- They like the look of the product; visual stimulation
- They purchased before and want the same thing again.

If the product is not consistent then the customer will not be satisfied and will then complain.

Consistency in product manufacture is achieved by the following.

- Correct weighing of Ingredients
- Formula balance
- Bakery products are consistent when formula balance is maintained
- Scaling weights accurately
- Mixing the dough/batter the same every time
- Cutting or weighing to correct size
- Moulding to correct shape
- Baking the same every time.

These are the skills and technique that will return a consistent bakery product every time.

After baking the product might need to be cut again into portions.

Everything must look the same

Then when all is ready for sale then all must be sold the same way. Either:

- By portion, each
- By weight, kg or gm.

Skills required by the technician: pastry cook/cook/patissier includes the following:

- **Beating** can be vigorous combing of butter and sugar to aerate the batter before adding eggs
- **Blending** is slowly combining ingredients so as to not lose volume or break up ingredients. This can be done with a spoon or spatula
- **Whisking** is using a whisk to aerate; many types on a whisk passing through the cream introduces air into the cream and so aerates the cream
- **Folding** is layering over the product again and again
- **Rolling** is done with rolling pin or stick. Roll pastry or dough to make thinner
- **Laminating** is done to Puff pastry, Danish and Croissants dough. It is layering dough and fats, rolling and turning. The layered fats in dough cause the dough to split during baking and it helps to aerate the product leading to more gentle texture and easier eating

- **Creaming** is blending of fat and sugar or just fats to incorporate air to lighten the texture
- **Kneading** is working dough to increase gluten development in bread dough.

Recipe of good baking

- Weigh all ingredients. Do not measure them.

What is the difference?

- Weight is measured by scaling ingredients on the same set of weighing scales
- Measuring is done with cups and is by volume. Weigh is inconsistent each time.

Example

- 1 kilo weighs 1 kilo
- 200gm weighs 200 gm
- 1 cup of water measures 250 ml, it weighs 250 gm.

But

1 cup of flour measures 250 ml; it weighs 120gm-150gm depending on several factors.

Let's deal with the weight difference

Volume measuring by cup is good but the density of each ingredient is different so you get a different weight from each ingredient.

Water weight is same as volume; 1 kilo measures 1 litre; 1 litre weighs 1 kilo.

Dry ingredients all have a different density so therefore the weight of the same volume is different. For example: 1 cup of weighs?

Sugar	225 gm	**Flour**	150 gm	**Almonds Whole**	120 gm
Rice, uncooked	220 gm	**Honey**	375 gm	**Almonds, ground**	125 gm

Standard for measure I cup volume: level to top of cup, not packed.

Consistency of results in baking comes with consistent measurements: WEIGH.

3.6 Bake pastries to enterprise requirements and standards

Product characteristics that customers look for come from the following:

- **Colour of the product** when it is finally removed from the oven is important to the visual appeal of the product. Colour stimulates the senses and encourages the customer to purchase
- **Appearance** is about form and shape. It is important that all pieces have the same appearance
- **Consistency** and texture is about how it feels in the mouth when the customer is consuming the product
- **Moisture content** adds to the shelf life and mouth feel of the product
- **Mouth feel** and eating properties.

This is achieved by maintaining consistency of production. Nobody is allowed to move away from the given formula, shape design.

3.7 Select correct oven conditions for baking pastries

Pastries

Savoury short pastry and puff pastry need a solid heat in the high temperature range:

- 180°C – 230°C.

When pastry is used on bottom of pies and quiche a higher heat is recommended to be able to penetrate the multiple layers of metal or foil and baking tray.

Shortbread or sweet pastry it is recommended that a lower heat setting is used because of the sugar used in the dough:

- 160°C- 210°C.

Gentler heat will result in less shrinkage during the baking process.

Work Projects

It is a requirement of this Unit you complete Work Projects as advised by your Trainer. You must submit documentation, suitable evidence or other relevant proof of completion of the project by the agreed date.

The student will need to produce a report on three types of pastries that they will be completing:

- A brief history of the style will need to be presented
- Define the ethnic origin of the pastry
- Does it have any significance about it? Special occasions, festival time.

3.1 Produce a list of 3 different types of pastries that will be produced.

- Puff pastry
- Shortbread
- Savoury short pastry.

3.2. Complete a list of all ingredients to complete selection.

- Different types of flour
- Different types of sugar
- Milk fresh or powdered?

3.3. Complete list of ALL equipment needed, both large and small.

- Describe the listing of large equipment
- Small hand tools
- Consumables required.

Summary

Prepare and produce pastries and fillings

Select required commodities according to recipe and production requirements

- Pastries require specific ingredients to achieve specific results:
  - Flour
  - Sugar
  - Fats
- All formula will vary depending on the recipes.

Prepare a variety of pastries

- Variety of pastry and variety of pastries made from each variety of pastry:
  - Puff pastry
  - Shortbread
  - Short pastry (savoury)
  - Choux pastry.

Produce a variety of pastries according to standard recipes and enterprise standards

- Each establishment will have different expectations and standards
- 5 star hotel compared with bakery in street.

Use appropriate equipment to prepare and bake pastries

- Professional quality equipment is much better than using domestic equipment.

Use correct techniques to produce pastries to enterprise standards

- Complete understanding of technical terms and the skills required to manipulate ingredients in order to produce the product required.

Bake pastries to enterprise requirements and standards

- All products should look the same
- Consistency across product is imperative.

Select correct oven conditions for baking pastries

- Different products require different oven settings
- High sugar may need to be cooked at lower temperature.

Element 4:
Decorate and present pastries

4.1 Prepare a variety of filings coating, icing, glazes and decorations for pastries

Fillings can be savoury or sweet.

Savoury fillings for pies, samosas, curry puffs, meat based or vegetarian.

It is only limited by the imagination of the Patissier.

Requirements for fillings:

- Must be cooked
- Must have moisture content controlled.

Pastry must cook before filling boils out during the baking process.

The variety of pastry possible is immense.

There are standard European style recipes that are produced around the world in leading hotels.

As these universal pastries encroach on local ethnic cuisines they will take on characteristics of the local ingredients.

As cuisines from all countries are now embraced by many countries variations will creep into the style.

It is in the interest of the Student to study styles and recipes from other countries and try to reproduce the product as faithfully as possible to the original style.

Activity

Produce a variety of fruit fillings suitable for use in a fruit slices.

Item	Ingredient	Weight (gm)	Method
1	Mixed Peel Sultanas Currants Diced Apples Brown Sugar Mixed Spice Cake Margarine	.100 .600 .200 .300 .300 .020 .100	Mix together until fully combined. Spread evenly onto the shortbread base.
	Total weight	**1.620**	

Fruit slice filling (may be used in place of commercial fruit mince)

Pie Apricot Filling

Item	Ingredient	Weight (gm)t	Method
1	Caster Sugar Instant Starch	.250 .100	Mix together thoroughly.
2	Pie Apricot	2.200	Fold apricot through starch and sugar mix
	Total weight	**2.575**	

Pie Apple Filling

Item	Ingredient	Weight (gm)	Method
1	Pie Apple Cinnamon	2.200 .003	Mix apples.
2	Caster Sugar Instant Starch	.250 .050	Blend 2 together thoroughly. Vigorously fold 1 & 2 together.
	Total weight	**2.503**	

Remember – 'The pastry should be baked before the filling boils.'

Streusel/crumble topping

Item	Ingredient	Weight (gm)	Method
1	Butter Caster Sugar	.160 .130	Mix Group 1 together and cream only slightly.
2	Plain Flour Cinnamon	.220 .003	Sieve 2 and rub into 1 until crumbly
	Total weight	**.513**	

Top the filling with the mixture and bake at 200ºC for 20 – 25 minutes.

Activity

Basic fruit mince recipe

Item	Ingredient	Weight (gm)	Method
1	Suet, finely chopped Apples, finely chopped	.250 .250	Peel apples, process and add to suet.
2	Raisins Chopped citrus peel Sultanas Currants Lemon	.250 .125 .250 .250 .100	Chop raisins and citrus peel. Mix with the sultanas, currants, lemon juice and zest. Add to group 1
3	Sugar Mixed Spice Ground Almonds	.250 .008 .035	Stir in the sugar. Add the mixed spice and ground almonds to the above
4	Brandy	.150	Finally stir in the brandy and mix groups together thoroughly. Keep for at least 2 days before transferring to smaller storage containers. Seal well. Store in a cool, dry place until required.
	TOTAL WEIGHT	**1.918**	

Fruit pies

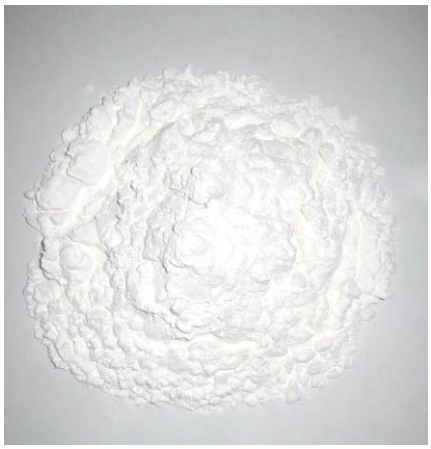
Fillings for pies

Apple, plum, blackberry, gooseberry, cherry, red currant, blackcurrant, rhubarb and dates are examples of fruit which may be used in pies.

The fruit filling should be 500g of which not more than 60g is juice. Alternatively, 250g of solid fruit and 120g of juice thickened with pre-gelatinised starch could be used.

Additional ingredients may be added to enhance the flavour of the filling. These may include fruit such as apple and rhubarb, dried fruit such as sultanas or use of spices such as ginger.

Pre-gelatinised starch



Canned apple is unsweetened, and the addition of sugar alone results in a very wet and sloppy filling which is not suitably stable as a pie or slice filling.

The excessive moisture created by the dissolving sugar slows baking of the bottom crust, induces premature boiling of the filling during baking, and shortens the shelf-life of the product.

The addition of pre-gelatinised "instant" starch will produce a filling which remains stable under a wide range of conditions and temperatures, and is more economical as it allows the addition of extra liquid to the mix.

Pre-gelatinised or soluble starch is produced commercially by blowing a starch suspension onto steam-heated rotating rollers.

Gelatinisation and drying take place and the dried material is then flaked or ground to make a powder.

The process ruptures the starch granules, without completely distorting them, so that they swell in cold water to form a viscous paste. Because of this "instant" characteristic, great care is needed to prevent lumping as moisture and starch come together.

Ideally the starch should be dispersed into the sugar before moisture is added.

Activity

Using the apple filling for apple pie or an alternative filling, liberally top with the crumble mixture.

Bake at 200°C until the mixture is golden brown and has formed a crust.

Product evaluation

When evaluating covered sweet pies here are some features to look for:

Texture

- A crisp but not tough pastry shell
- Pastry and filling should hold their shape when cut. Apple or other fruit should not fall away from the pastry
- Crumble should be crisp on top.

Colour

- Pastry and crumble should have a golden brown finish
- Fruit mince should be dark brown in colour.

Taste

- Pastries should be sweet but not overpowering
- Fruit mince should be rich with a complex fruity, spicy flavour
- Pie fillings should reflect the major fruit used and not be overpowered by additional flavourings.

Activity

Produce Australian Sausage rolls

After observing a demonstration, alter the following recipe and produce half puff pastry, scotch method from 2kg of flour. Allow to rest. Alternate folding, using rolling pin and dough brake.

Half puff pastry

Item	Ingredient	Weigh (gm)t
1	Bakers flour Salt Water	1.200 .010 .600
2	Pastry Margarine	.600
	Total weight	**2.410**

- Mix water, salt and flour until nearly dough stage
- Add margarine pieces to Group1 and finish mixing
- Lumps of margarine should still be showing at finish
- Rest dough 15 minutes before use
- Block up the dough and roll out so that it is three times as long as it wide, and approximately lcm thick
- Give a three-fold by half tum and immediately repeat this operation. Cover and let rest for 10 – 15 minutes
- Give two more three-fold by half turn, give a further rest and repeat until 6 x 3 folds have been completed.

Remember

- Safety and hygiene requirements when using hand dough-brake
- Correct resting periods between folds
- Minimum use of dusting flour.

Sausage Roll Filling

Item	Ingredient	Weight (gm)	Method
1	Minced meat Sausage Mince Egg Onions Pepper Beef Booster Salt Worcestershire sauce Chicken Booster	.550 .250 .100 .150 .005 .005 .010 .005 .005	Chop the onions very finely and mix all of group 1 together.
2	Bread Crumbs Water to piping consistency	.250 .250	Add breadcrumbs and mix through group 1. Pipe onto prepared strips of puff paste.
	Total Weight	**1.200**	

Make up procedure

- Produce 1
- Pin the finished paste out 2.5 mm in thickness and cut into strips 110mm wide
- Using a large plain tube, pipe the meat filling along the top edge of the strips
- Wash the bottom edge of the strips with water and roll over to enclose the filling. Ensure that the seam is directly underneath
- Bring all the rolls close together and mark into 100mrn lengths
- Cut, egg wash and place onto prepared baking sheets
- Bake at 220°C for 15 – 20 minutes
- Remove from baking tray onto a cooling wire.

Activity

English Cornish Pastie filling mix

Item	Ingredient	Weight (gm)	Method
1	Potatoes Carrots Onions Frozen peas Minced Beef, raw	.450 .250 .050 .050 .150	Peel wash and chop vegetables. Mix meat and vegetables together thoroughly.
2	Salt Pepper	.010 .005	Add seasoning to group 1. Mix thoroughly.
	Total Weight	**.965**	

Make up procedures

- Roll out puff pastry to a thickness of 5mm
- Cut 12 discs at 18 cm in diameter
- Wash half of each disc with water
- Divide the filling mixture between the discs
- Fold over and seal edges
- Egg wash and snip with scissors
- Place onto lightly greased baking tray—care should be taken not to have them too dose together
- Bake at 220°C for approximately 20 minutes
- Remove from baking tray onto a cooling wire.

Student needs to produce 500gm of flour into a savoury short pastry or 500gm ¾ puff pastry using English method to complete these English pasties

Meat Pie Fillings

Yield: 35 units

Item	%	Weight (gm)	Method	Price (KG)	Price Unit
1		1.250 1.250 .010 .004 .030 .010 .010	Minced beef Water Salt Black pepper Beef Booster Chicken booster Worcestershire sauce		
2		.500 .250 to colour	Water Flour Blackjack, Parisienne Essence		
			Total Weight		

The student will need to produce

- Savoury short pastry for the pie bottom
- Puff pastry for the top (half puff).

Austrian Apple Strudel filling:

Group	Weight (gm)	Method	Price (KG)	Price Unit
1	1.000 .005 .125 .080 .050 .100 .050	Apples, fresh Cinnamon, ground Caster sugar Cake crumbs Almonds, flaked Sultanas Butter, Clarified		
	1.510	**Total Weight**		

Activity

Produce a quantity of spinach filling

Process into spinach triangles using commercially produced filo pastry, bake and finish as directed.

Yield: 16 pieces.

Required:

Filo pastry	4 sheets
Clarified butter	100 gm

Spanakopita Filling

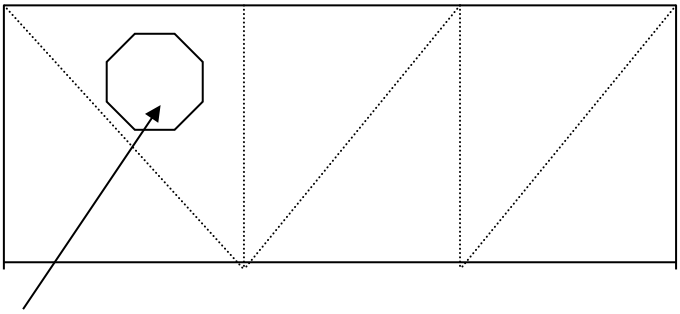
Group	Weight (gm)	Method	Price (KG)	Price Unit
1	.700 .100 1 pinch .005 .175 .050 .005 .002	Spinach or silver beet Olive oil Onion, finely diced, sautéed Nutmeg, ground Dried parsley Fetta cheese, crumbled Cheese, parmesan, grated Salt Nutmeg		
		Total Weight		

- Wash spinach, blanch in boiling water for 30 – 60 seconds
- Remove and drain, remove all water by squeezing tightly
- Place all ingredients in bowl and mix together thoroughly.

Spanakopita make up procedure

Take four sheets of filo pastry. Brush bottom three sheets with melted butter. Top sheet brush lightly with water:

- Cut pastry in half for large pastries
- Cut pastry into thirds for medium pastries
- Cut pastry into quarters for small party pastries.



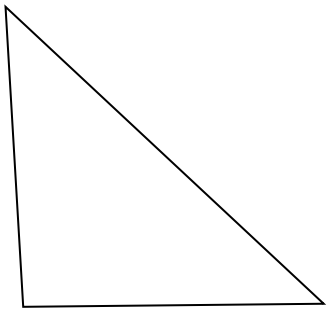
Spinach filling

- Fold pastry to form an elongated rectangle approximately 10.5cm x 23.5 cm
- Place 40-50 grams filling on both bottom right corner of sheet
- Fold corner over to form a triangle
- Repeat till all pastry is used up
- It will result in a filling which is enclosed in a laminated pastry.

Final Shape

Brush over with a light coating of olive oil.

Place triangles on silicone papered trays and bake in solid 220°C for 15-20 minutes.



4.2 Decorate pastries using coating, icing and decorations according to standard recipes and/or enterprise standards and/or customer requests

Fondant Icing

Is applied to many puff pastry items; it can be applied thick or very thinly.

The end result should be that it has a shine and is touch dry when it cools to room temperature. This is achieved by correct tempering.

Glazes

Glaze is a term used to describe a covering that highlight a product to catch the eye of the consumer and entice them to consume the product.

A glaze should protect the product from things like migrating moisture from inside the product and from outside air making the product soft.

It will also add flavour and eye appeal to the product.

Gum Arabic that is used on gingerbreads and heavy honey breads like Basel leckerli will on add shine. There is no flavour added.

Decorations

Decorations can be many things:

- Roasted nuts
- Items made of another ingredient like sugar and coloured; non-pariels
- Smaller baked pastry added to product after main product is baked.

Icing sugar

Icing sugar sifted over baked pastries after they have been removed from the oven can be used as a glaze.

Icing sugar applied before baking will caramelise in the high baking temperature and leave an appealing shine to the cooled product.

4.3 Present/display pastries to enterprise standards using appropriate service equipment

Presentation of product is dependent on where and how it is to be sold.

From the bakery

Presented on tray laying flat showing filling if any; the filling will have eye appeal

- Apple Danish should have lots of apple pieces
- Apricots need to be visible
- Nut Danish: need to see the nuts.

At times they may be stacked to show abundance but this can cause product on the bottom to be squashed.

Display in bakery

Most are displayed on trays that contain up to 12 portions. Service is taken from the back of the tray.

Larger pieces might be presented individually on doyley and cardboard bases.

Doyleys are used extensively in presentation as t is a barrier between the product and service ware.

From the restaurant show case or buffet trolley

When purchasing your morning coffee a selection of bakery goods will be displayed for customer selection.

At the café they will be behind a safety barrier.

In fine dining hotel it can be displayed on a trolley that is wheeled up to the table for the customer to choose.

This is an old practice and is not used in many places in the modern age.

Service ware

These are the platters trays and plates that are used to display and serve product in cafes and dining rooms.

These can also be used with doyleys between product and service ware.

Work Projects

It is a requirement of this Unit you complete Work Projects as advised by your Trainer. You must submit documentation, suitable evidence or other relevant proof of completion of the project to your Trainer by the agreed date.

4.1 The student will need to produce a diagram of a pastry that they will be decorating.

- A brief history of the style will need to be presented
- Define the ethnic origin of the pastry
- Does it have any significance about it? Special occasions, festival time.

4.2 Describe the filling that may be used in the cake

- Does the pastry have a filling
- What is the role of the filling?

4.3. Describe the process of glazing the pastry

- What type of glaze will be used?
- Fondant
- Ganache

4.4. State how the pastry is going to be presented

- Is it going to be sold whole?
- Is the pastry going to be sliced and sold in pieces?
- Will the customer take the pastry home?
- Will the pastry be consumed on the premises?

Summary

Decorate and present pastries

Prepare a variety of filings coating, icing, glazes and decorations for pastries

- Sweet fruit fillings
- Savoury meat based fillings
- Savoury vegetarian fillings
- All need to be cooked and held with a thickening agent to hold the moisture
- A filling must be stabilised so the liquid does not saturate the pastry that encompasses the filling
- Coatings, Glazes should highlight the product and add flavour

Decorate pastries using coating, icing and decorations according to standard recipes and/or enterprise standards and/or customer requests

- Fondant: may not be available in all countries but where available it can be used
- A glaze is meant to highlight attributes of a product
- Plaited sweet breads might only glaze on the high part, hence highlighting parts
- A glaze can be used to completely envelop a product
- It will protect, add flavour and promote the product
- Decorating can be anything that is edible
- It may be other food items like sugar on top of pastry that has not melted after cooling
- It may be something separate that has been made and added later.

Present/display pastries to enterprise standards using appropriate service

- Presentation will depend on where the product is going to be displayed. Inside of building product may be displayed on platters and plates while outside it will need to be protected from outside contamination by applying a covering of clear packaging
- Presentation should profile the product and entice the customer to consume the product.

Element 5:
Store cakes and pastries

5.1 Store at correct temperature and conditions of storage

Bakery products tend to be stable at room temperature. No special storage requirements need to be applied for daily use.

Any product that is to be served after the day of manufacture the product will need to be covered and protected from outside contamination.

- Products with cream filling will need to be kept chilled
- Cream patisserie can stand at room temperature for the day but must be discarded and not.

Most bakery products are sold or used the same day that they are produced.

If they are to be stored at room temperature:

Store at Room Temperature

Festive product may be stored for a couple of days. Longer storage is best to freeze

If the baked product does not contain dairy products then it can be stored at room temperature.

- Protected from the environment by being covered.

When food is chilled it can lose essential parts of the flavour.

When storing it is always important to make sure product is labelled and it is stored away from strong odours like onion or cleaning chemicals.

Freezing

If freezing baked bakery products care must be taken not to squash them when wrapping.

This will cause them to be deformed when thawed out. When freezing be sure to label with the date of freezing and use the FIFO rule.

Storing in Cool room

Product with dairy ingredients like cream and crème patisserie need to be kept chilled to stop bacterial activity rising above acceptable limits.

Never store for too long in cool room:-fresh cream, same day only.

Product degradation will be too great and eating quality diminishes.

5.2 Maintain maximum eating quality, appearance and freshness

All bakery products will stale.

Staling is the process where the optimum eating fades.

Staling can be in several forms.

- Air passes through the product and dries the product out
- Moisture from the air enters the product so it loses some of the eating quality
  - Crisp product goes soft.

To maintain the eating quality of bakery items

- Use as soon as possible
- Cover to protect from environment
- Keep chilled
- Keep dry.

Different methods for different product

Bread: keep in plastic bags to prevent staling. Bread should not be kept in plastic bags at room temperature too long as mould can grow with warmth and moisture.

If bread is to be stored for long periods it is best to freeze. Bread stales fastest when in the cool room for extended periods. Freezing is best

Croissants will be considered stale the next day when they lose crispness. After baking it is best to freeze if you wish to store them for any period of time.

- Thawing is quick as they product is light
- Thaw best at room temperature.

Danish pastry is best consumed on the day that it was produced.

- Can be stored and re heated at later time, but eating quality is reduced.

Muffins

- American style are best consumed on the day that they were produced
- English style is like bread.

Any yeast product is best consumed on the day that it was produced.

Gingerbreads can be stored for periods if they are protected from the moisture in the air. It makes the product go soft.

Work Projects

It is a requirement of this Unit you complete Work Projects as advised by your Trainer. You must submit documentation, suitable evidence or other relevant proof of completion of the project to your Trainer by the agreed date.

The student will need to present a report on the following points

5.1 What temperature are you going to store your finished pastries and cake product?

- You need to cite standards and explain why these standards are being implemented
- Students can use photographic evidence to demonstrate how this will be implemented

Summary

Store cakes and pastries

Store at correct temperature and conditions of storage

- Cakes store best at room temperature. If they need to be stored for long term then they are best frozen
- When storing they need to be protected from outside contamination
- Cakes containing fresh dairy products like cream need to be kept in controlled environment, chilled.

Maintain maximum eating quality, appearance and freshness

- Bake fresh everyday is the best way to maintain freshness
- Lighter style cakes and pastries have a very short shelf-life, 1 – 2 days
- Heavier dark fruit cakes will last several months due to the density of the product and the amount of sugar and moisture contained inside.

Presentation of written work

1. Introduction

It is important for students to present carefully prepared written work. Written presentation in industry must be professional in appearance and accurate in content. If students develop good writing skills whilst studying, they are able to easily transfer those skills to the workplace.

2. Style

Students should write in a style that is simple and concise. Short sentences and paragraphs are easier to read and understand. It helps to write a plan and at least one draft of the written work so that the final product will be well organised. The points presented will then follow a logical sequence and be relevant. Students should frequently refer to the question asked, to keep 'on track'. Teachers recognise and are critical of work that does not answer the question, or is 'padded' with irrelevant material. In summary, remember to:

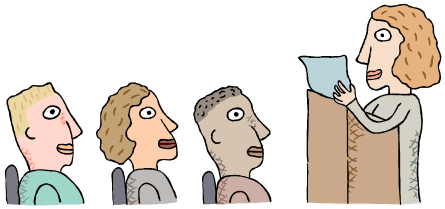
- Plan ahead
- Be clear and concise
- Answer the question
- Proofread the final draft.

3. Presenting Written Work

Types of written work

Students may be asked to write:

- Short and long reports
- Essays
- Records of interviews
- Questionnaires
- Business letters
- Resumes.



Format

All written work should be presented on A4 paper, single-sided with a left-hand margin. If work is word-processed, one-and-a-half or double spacing should be used. Handwritten work must be legible and should also be well spaced to allow for ease of reading. New paragraphs should not be indented but should be separated by a space. Pages must be numbered. If headings are also to be numbered, students should use a logical and sequential system of numbering.

Cover Sheet

All written work should be submitted with a cover sheet stapled to the front that contains:

- The student's name and student number
- The name of the class/unit
- The due date of the work
- The title of the work
- The teacher's name
- A signed declaration that the work does not involve plagiarism.

Keeping a Copy

Students must keep a copy of the written work in case it is lost. This rarely happens but it can be disastrous if a copy has not been kept.

Inclusive language

This means language that includes every section of the population. For instance, if a student were to write 'A nurse is responsible for the patients in her care at all times' it would be implying that all nurses are female and would be excluding male nurses.

Examples of appropriate language are shown on the right:

Mankind	*Humankind*
Barman/maid	*Bar attendant*
Host/hostess	*Host*
Waiter/waitress	*Waiter or waiting staff*

Recommended reading

Beranbaum, Rose Levy: 2009; *Rose's Heavenly Cakes*; Houghton Mifflin Harcourt;

Boyle, Tish; 2006; *The Cake Book*; Houghton Mifflin Harcourt

Bullock-Prado, Gesine; 2013; *Bake It Like You Mean It: Gorgeous Cakes from Inside Out*; Stewart, Tabori and Chang

Editors of Martha Stewart Living ; 2013; *Martha Stewart's Cakes: Our First-Ever Book of Bundts, Loaves, Layers, Coffee Cakes*; Clarkson Potter

Kasne, Karen; 2011; *Extraordinary Cakes: Recipes for Bold and Sophisticated Desserts*; Rizzoli

Maree, Aaron; 1995; *Cakes, Tortes and Gateaux of the World: Exotic and Delightful Recipes, Icings, Toppings and Decorations*; Cassell Illustrated

Mörwald, Toni; *Austrian Desserts: Over 400 Cakes, Pastries, Strudels, Tortes, and Candies*; Skyhorse Publishing

Rowe, Anna; 2013; *TOP 30 Easy And Delicious Cake Recipes*; Amazon Digital Services

Rettke, Amanda; 2014; *Surprise-Inside Cakes: Amazing Cakes for Every Occasion*; William Morrow Cookbooks

Richardson, Julie; 2012; *Vintage Cakes: Timeless Recipes for Cupcakes, Flips, Rolls, Layer, Angel, Bundt, Chiffon, and Icebox Cakes for Today's Sweet Tooth*; Ten Speed Press

Trainee evaluation sheet

Prepare and produce cakes and pastries

The following statements are about the competency you have just completed.

Please tick the appropriate box	Agree	Don't Know	Do Not Agree	Does Not Apply
There was too much in this competency to cover without rushing.	☐	☐	☐	☐
Most of the competency seemed relevant to me.	☐	☐	☐	☐
The competency was at the right level for me.	☐	☐	☐	☐
I got enough help from my trainer.	☐	☐	☐	☐
The amount of activities was sufficient.	☐	☐	☐	☐
The competency allowed me to use my own initiative.	☐	☐	☐	☐
My training was well-organised.	☐	☐	☐	☐
My trainer had time to answer my questions.	☐	☐	☐	☐
I understood how I was going to be assessed.	☐	☐	☐	☐
I was given enough time to practice.	☐	☐	☐	☐
My trainer feedback was useful.	☐	☐	☐	☐
Enough equipment was available and it worked well.	☐	☐	☐	☐
The activities were too hard for me.	☐	☐	☐	☐

The best things about this unit were:

The worst things about this unit were:

The things you should change in this unit are:

Trainee Self-Assessment Checklist

As an indicator to your Trainer/Assessor of your readiness for assessment in this unit please complete the following and hand to your Trainer/Assessor.

Prepare and produce cakes and pastries

		Yes	No*
Element 1: Prepare and bake cakes and filings			
1.1	Select required commodities according to recipe and production requirements	☐	☐
1.2	Prepare a variety of cakes to desired product characteristics	☐	☐
1.3	Produce a variety of cakes according to standard recipes and enterprise standards	☐	☐
1.4	Use appropriate equipment to prepare and bake cakes	☐	☐
1.5	Use correct techniques to produce cakes to enterprise standards	☐	☐
1.6	Bake cakes to enterprise requirements and standards	☐	☐
1.7	Select correct oven conditions for baking cakes	☐	☐
Element 2: Decorate and present/display cakes			
2.1	Prepare a variety of fillings and coating/icing, glazes and decorations for cakes	☐	☐
2.2	Decorate cakes using fillings and coating/icing and decorations according to standard recipes and/or enterprise standards and/or customer requests	☐	☐
2.3	Present/display cakes to enterprise standards using appropriate service equipment	☐	☐
Element 3: Prepare and produce pastries and fillings			
3.1	Select required commodities according to recipe and production requirements	☐	☐
3.2	Prepare a variety of pastries	☐	☐
3.3	Produce a variety of pastries according to standard recipes and enterprise standards	☐	☐
3.4	Use appropriate equipment to prepare and bake pastries	☐	☐
3.5	Use correct techniques to produce pastries to enterprise standards	☐	☐

		Yes	No*
3.6	Bake pastries to enterprise requirements and standards	☐	☐
3.7	Select correct oven conditions for baking pastries	☐	☐
Element 4: Decorate and present pastries			
4.1	Prepare a variety of filings coating, icing, glazes and decorations for pastries	☐	☐
4.2	Decorate pastries using coating, icing and decorations according to standard recipes and/or enterprise standards and/or customer requests	☐	☐
4.3	Present/display pastries to enterprise standards using appropriate service equipment	☐	☐
Element 5: Store cakes and pastries			
5.1	Store at correct temperature and conditions of storage	☐	☐
5.2	Maintain maximum eating quality, appearance and freshness	☐	☐

Statement by Trainee:

I believe I am ready to be assessed on the following as indicated above:

Signed: _____ **Date:** _____ / _____ / _____

Note:

For all boxes where a **No*** is ticked, please provide details of the extra steps or work you need to do to become ready for assessment.


William
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